

Democritus and the Critical Tradition

by

Joseph Gresham Miller

Department of Classical Studies  
Duke University

Date: \_\_\_\_\_

Approved: \_\_\_\_\_

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José M. González, Supervisor

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Michael T. Ferejohn

\_\_\_\_\_  
Jed W. Atkins

\_\_\_\_\_  
James H. Leshner

Dissertation submitted in partial fulfillment of  
the requirements for the degree of Doctor of Philosophy in the Department of  
Classical Studies in the Graduate School  
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2013

ABSTRACT

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## **ABSTRACT**

Modern scholars cannot agree how extant fragments of thought attributed to Leucippus and Democritus integrate (or do not) to form a coherent perspective on the ancient Greek world. While a certain degree of uncertainty is unavoidable, given the nature of the evidence available and the fact that Democritus wrote many different works (including at least one in which he deliberately argued against positions that he defended elsewhere), this study demonstrates that we know enough to take a more integrative view of the early atomists (and of Democritus in particular) than is usually taken. In the case of Democritus, this study shows that it makes good sense to read what remains of his works (physical, biological, and ethical) under the presumption that he assumes a single basic outlook on the world, a coherent perspective that informed every position taken by the atomist philosopher.

Chapter 1 provides an in-depth portrait of the historical and philosophical context in which early atomism was born. As part of this portrait, it offers thumbnail sketches of the doctrines attributed to a representative catalogue of pre-Socratic philosophers to whom published work is attributed (Anaximander, Xenophanes, Heraclitus, Parmenides, Empedocles, Anaxagoras, Philolaus). It demonstrates how each philosopher presumes that his theory offers a universal outlook on human reality, a perspective on the universe which purposely encompasses (and builds into a single theoretical framework) physics and biology and practical ethics.

Chapter 2 introduces the early atomists as respondents to the pre-Socratic movement before them (a movement which this study refers to as the Critical Tradition).

It presents evidence for an integrated reading of early atomist fragments, a reading that construes the Leucippus and Democritus as men of their time (working with and responding to the positions taken by their predecessors in the Critical Tradition).

Chapter 3 shows how Democritus' ethics arise naturally from his physics via an historical process of development. Like his predecessors in the Critical Tradition and many of his contemporaries, the atomist deliberately imagines nature (physics) providing the raw material from which culture (ethics) naturally and inevitably rises.

Chapter 4 offers an original reading of extant ethical fragments of Democritus, showing how the atomist uses his unique outlook on the world to develop a practical approach to living well.

## DEDICATION

*Poetae mundum fabricanti verbis omnimodis atque pulmonem perpetuo risu agitati*

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## ABBREVIATIONS

Standard abbreviations are used for collections and editions of texts, but the reader may find the following list helpful.

DK	H. Diels and W. Kranz, eds. 1952 (6 <sup>th</sup> ed.). <i>Die Fragmente der Vorsokratiker</i> . Berlin: Weidmann.
KRS	G. S. Kirk, J. E. Raven, and M. Schofield. 1983. <i>The Presocratic Philosophers: A Critical History with a Selection of Texts</i> . 2 <sup>nd</sup> edition. Cambridge: Cambridge University Press.
LS	Lewis, C. H., and C. Short. 1879. <i>A Latin Dictionary</i> . Oxford: Clarendon.
LSJ	Liddell, H. G., H. S. Jones, R. McKenzie, and R. Scott, edd. 1996 (9th ed). <i>A Greek-English Lexicon</i> . Oxford: Clarendon Press.
Luria	Luria, S. 1970. <i>Democrito: Raccolta dei frammenti, interpretazione e commentario</i> . Reprinted 2007. Transs. A. Krivushina, D. Fusaro. Ed. G. Girgenti. Milano: Bompiani.
OCD	S. Hornblower and A. Spawforth, edd. 1996 (3 <sup>rd</sup> ed.). <i>The Oxford Classical Dictionary</i> . Oxford: Clarendon.
PG	Migne, J.-P., ed. 1857-1866. <i>Patrologiae cursus completus: Series Graeca</i> . Paris.
SEP	Edward Zalta, ed. 2011. <i>The Stanford Encyclopedia of Philosophy</i> . Winter 2011 Edition (21 Dec 2011). < <a href="http://plato.stanford.edu/">http://plato.stanford.edu/</a> >. Stanford: Metaphysics Research Lab (Stanford University).
Taylor	Taylor, C. C. W. 1999. <i>The Atomists: Leucippus and Democritus</i> . Toronto: University of Toronto Press.

### *Ancient Works*

Abbreviations for ancient sources are those given by Luria (1970), supplemented where necessary by F. R. Adrados et. al., 1980-, *Diccionario Griego-Español (DGE)*, Madrid.

## ACKNOWLEDGMENTS

*Familiae meae atque amicis atque magistris omnibus, gratias vobis ago.*

*Patientia vel doctrina vestra omissa, scriptum hoc opus non fuisset.*

## INTRODUCTION. DEMOCRITUS THE PARADOX

### Setting the Stage (i.1)

Democritus of Abdera is a paradox. An instructive instance of the problem he presents occurs in the *Πρὸς Κωλώτην*, where Plutarch defends him and other ancient thinkers from the accusation (advanced by the Epicurean Colotes) that their doctrines make life impossible. In answer to this charge, Plutarch distinguishes two opposing views of life, one deriving from philosophy in general (Plutarch names Democritus, Stilpon, Empedocles, Parmenides, and Melissus among its exponents)<sup>1</sup> and the other coming from Epicurus:

TEXT ( <i>Einarson &amp; De Lacy</i> ) <sup>2</sup>	TRANSLATION ( <i>Einarson &amp; De Lacy</i> )
καίτοι τὸ μὲν ζῆν οἱ γονεῖς μετὰ τῶν θεῶν ἡμῖν ἔδωκαν, παρὰ δὲ τῶν φιλοσόφων δίκης καὶ νόμου συνεργὸν οἴομεθα λόγον ἐπιθυμιῶν κολαστὴν λαβόντες εὖ ζῆν· τὸ δὲ εὖ ζῆν ἐστὶ κοινωνικῶς ζῆν καὶ φιλικῶς καὶ σωφρόνως καὶ δικαίως, ὧν οὐθὲν ἀπολείπουσιν οἱ περὶ γαστέρα τὰγαθὸν εἶναι βοῶντες, οὐκ ἂν δὲ τὰς ἀρετὰς ὁμοῦ πάσας τετρημένου χαλκοῦ πριάμενοι δίχα τῆς ἡδονῆς, πάσης πανταχόθεν ἐξελαθείσης· ἐνδεῖν δὲ αὐτοῖς τὸν περὶ θεῶν καὶ ψυχῆς λόγον ὡς ἡ μὲν ἀπόλλυται διαλυθεῖσα, τοῖς δὲ οὐθενὸς μέλει τῶν καθ' ἡμᾶς. τοῖς μὲν γὰρ ἄλλοις φιλοσόφοις ἐγκαλοῦσιν οὗτοι διὰ τὸ σοφὸν ὡς τὸ ζῆν ἀναιροῦσιν, ἐκεῖνοι δὲ τούτοις ὅτι ζῆν ἀγεννῶς καὶ θηριωδῶς διδάσκουσι.	Life was bestowed on us by our parents with the aid of heaven; but the good life, in our view, we owe to the philosophers, who gave us the reasoning that helps justice and law in curbing our lusts; and to live the good life is to live a life of participation in society, of loyalty to friends, of temperance and honest dealing. But none of this is left to us by those who keep shouting that the good is to be found in the belly; that they would not give a copper with a hole in it for all the virtues in a lump apart from pleasure, supposing pleasure totally banished from every one of them; and that the account they need of the gods and of the soul is an account that tells how the one is dissolved and perishes, and the others care nothing for our affairs. Thus these people charge the other philosophers with making life impossible by their wisdom,

<sup>1</sup> See Plut. *Adv. Colot.* 1108b.

<sup>2</sup> The text and translation throughout are from Einarson and De Lacy (1967), 153-315.

	<p>whereas the other philosophers charge them with teaching us to live ignobly and like the brutes.</p> <p>Plut. <i>Adv. Colot.</i> 1108c-d</p>
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Accepting the commonplace exploited by Colotes, that the object of philosophy is the good life, Plutarch construes this life positively as “a life of participation in society, of loyalty to friends, of temperance and honest dealing” (κοινωνικῶς ζῆν καὶ φιλικῶς καὶ σωφρόνως καὶ δικάίως) and derives it from (1) parents (οἱ γονεῖς), (2) gods (μετὰ τῶν θεῶν), and (3) the inhibition of human desires through reason, the helpmeet of justice and law (δίκης καὶ νόμου συνεργὸν ... λόγον). He then accuses the Epicureans of abandoning this ideal for its opposite: an animal life (1) divorced from divine providence (τὸν περὶ θεῶν ... λόγον ὥς ... τοῖς δὲ οὐθενὸς μέλει τῶν καθ' ἡμᾶς) and (2) guided by pleasure (τῆς ἡδονῆς) in place of rational restraint. The contrast is transparently polemic, as the critique of Colotes appears to have been. What interests us is Plutarch's attempt to claim Democritus as an advocate for the civilized and philosophical life rather than the bestial and Epicurean. This two-pronged claim is not unproblematic, as evidenced by Plutarch's awkward rhetorical posturing when he comes to deal with Democritus directly.

### **Democritus and Epicurus: Good Atomism versus Bad (i.2)**

The first order of business is to address the relationship between Democritus and Epicurus, which Plutarch broaches by noting that Colotes' ungracious rejection of the Abderite is a fitting reward for such a teacher (καλὰ καὶ πρέποντα διδασκάλια: *Adv. Colot.* 1108e), who presumably should have known better than to create the atomist

physics that facilitated Epicureanism. Plutarch's objective is to distance master from pupil while undermining the claim that only the latter construes life as it really is (making life possible). Colotes makes this task easy. First, he conflates Democritus with Protagoras, making the atomist a dogmatic relativist incapable of perceiving real things (since atoms and void elude sensory perception). This gives Plutarch excuse to point out that Democritus actually composed arguments (γεγραμέναι πολλὰ καὶ πιθανὰ) against the Protagorean claim that “nothing is more this than that” (ἕκαστον ... οὐ μᾶλλον τοῖον ἢ τοῖον εἶναι; *Adv. Colot.* 1108f). Having established Democritus as a realist, Plutarch proceeds to lay waste to Epicurus' assertion that “all perceptions reaching us through the senses are true” (πάσας εἶναι τὰς δι' αἰσθήσεως φαντασίας ἀληθεῖς; *Adv. Colot.* 1109b = Epicurus, fr. 250 Usener), an idea Plutarch dismisses as relativist rubbish (and a black mark against Colotes, who rejects nonexistent relativism in Democritus only to embrace the real thing in Epicurus). Plutarch conveniently ignores evidence that Democritus might have accepted Epicurus' formulation, depending on the context in which it was given.<sup>3</sup> His only concern is to point out (1) that Democritus is not a total relativist (Colotes is wrong) and (2) that Epicurus might be (Epicureanism is not realism). Colotes' second mistake is disparage Democritus' assertion that perceived qualities are relative: “color, sweetness, combination, and the rest exist by convention” (νόμῳ χροιὴν εἶναι

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3 See Aristot. *Metaph.* 3.5.1009b.7 (= Democritus, fr. 80 Luria; fr. 177 Taylor); Makin (1993), 71-84. Assuming that Aristotle and Makin understand him correctly, Democritus appears to have made a distinction between ontological and epistemic reality. Ontologically, some perceptions would be true (accurate reflections of extant combinations of atoms and void) and others false (distorted reflections of extant combinations of atoms and void). Epistemically, humans cannot tell the difference. Thus the real difference between Protagorean or Epicurean relativism and Democritean realism becomes much less pointed than Plutarch would have it here.

καὶ νόμῳ γλυκὺ καὶ νόμῳ σύγκρισιν καὶ τὰ ἄλλα: *Adv. Colot.* 1110e).<sup>4</sup> Plutarch responds by again finding in Epicurus the relativism Colotes rejects in Democritus: the only material difference between the two is that Democritus admits the qualitative relativism following from his atomist principles while Epicurus fudges, trying to save realism by avoiding an explicit confession that perceived qualities are conventional constructs. Plutarch will not allow this kind of waffling:

TEXT ( <i>Einarson &amp; De Lacy</i> )	TRANSLATION ( <i>Einarson &amp; De Lacy</i> )
οὐκ οὖν ἀναγκαῖον ὑποθέσθαι, μᾶλλον δὲ ὑφέλῃσθαι Δημοκρίτου, ἀτόμους εἶναι τῶν ὅλων ἀρχάς· θεμένῳ δὲ τὸ δόγμα καὶ καλλωπισαμένῳ ταῖς πρώταις πιθανότησιν αὐτοῦ προσεκποτέον ἐστὶ τὸ δυσχερές, ἢ δεικτέον ὅπως ἅποια σώματα παντοδαπὰς ποιότητας αὐτῷ μόνῳ τῷ συνελθεῖν παρέσχεν.	There was no necessity to assume, or rather to filch from Democritus, the premise that the first elements of all things are atoms. But once you have laid down the doctrine and made a fine showing with its initial plausibilities, you must drain the disagreeable conclusions along with it, or else show how bodies without quality have given rise to qualities of every kind by the mere fact of coming together.  Plut. <i>Adv. Colot.</i> 1111c

This critique is rhetorically perfect, undercutting atomism while making Democritus look better than Epicurus. Unfortunately, Plutarch forgets that the atoms posited by Democritus and Epicurus are not strictly ἅποια σώματα, since the former gives his shape (ῥυσμός), order (διαθιγή), and orientation (τάξις) and the latter recognizes each as an indissoluble magnitudes with parts (*solida primordia ... quae minimis stipata cohaerent partibus arte*).<sup>5</sup> In the case of Democritus, Plutarch further overlooks that the

4 See Democritus, fr. 61 (where Diogenes of Oenoanda echoes the critique of Colotes, which thus appears as an Epicurean τόπος), 79-80, 382, 434 Luria (where Philoponus quotes Aristotle to the effect that οἱ περὶ Δημοκρίτον make πᾶσαν φαντασίαν ἀληθῆ).

5 For the qualities of the Democritean atom, see Aristot. *Metaph.* 985b4-22 (= Democritus, fr. 173, 241 Luria; fr. 46a Taylor; Leucippus, fr. A6 DK). For the parts of the Epicurean, see Lucret. 1.599-634 (ll.

conventional nature of perceived qualities does not necessarily mean that these offer no access to reality (a truth that his own earlier refutation of Colotes might have led him to suspect), only that the true nature of the reality they reflect remains unclear (since all possible perceptions of every possible combination of different atomic parts extant in the universe cannot be calculated with precision: Democritus actually ventured to speculate at some length about how an infinite variety of color might be created by endless iterations of his three atomic qualities).<sup>6</sup> It is hard to avoid the impression that Plutarch is simplifying atomism here (to make it appear untenable) and exaggerating the difference between Democritus and Epicurus (to make the master look better than the pupil).

The result of Plutarch's comparison of the two atomists is revealing. Atomism on the whole emerges as an untenable relativism (denying the ontological reality of perceived qualities that are essential to real life as imagined by Plutarch). Contrary to Colotes' claim, Epicurus is dismissed as a thoroughgoing relativist with no claim to special knowledge about real life, a fate from which Democritus is only barely saved (by his arguments against Protagoras). Plutarch's efforts to rescue Democritus are intriguing both for their failure and their success: in affirming the conventional nature of perceived qualities but denying the dogmatic relativism of Protagoras, the Abderite resists the absolute dichotomy that Plutarch (like Colotes) recognizes between relativism and realism. Voilà our first glimpse of Democritus the paradox: a realist who sees the world in relative terms such that others cannot decide whether to categorize him with

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609-610 quoted in the text).

6 See Theophr. *De Sensu* 72-82 (= Democritus, fr. 484 Luria; fr. A135 DK).



Protagoras (thus Colotes) or Plato (thus Plutarch here and Sextus Empiricus, who likewise puts idealist and atomist together as opponents of Protagoras).<sup>7</sup>

### **Democritus and the Good Life: Man and the Animals (i.3.1)**

Plutarch's principal objective is not to quibble about physics but to articulate and defend a non-Epicurean vision of the good life. We have already seen the theory on which he bases that life: its underpinnings are parents, gods, and λόγος (*Adv. Colot.* 1108c-d, quoted above). As material evidence of its soundness, Plutarch offers a catalogue of the lifework of the philosophers whose doctrine Colotes disparages. In addition to proving (against Colotes) that lack of Epicureanism is no inhibition to real life (a negative), the catalogue also illustrates positively that the good life is grounded apart from Epicurean ἡδονή (which Plutarch continues to construe polemically as mere animal pleasure, the insatiable greed of an uninhibited γαστήρ) and ἀταραξία (which Plutarch understands correctly as advocating a withdrawal from political activity). The catalogue thus represents a challenge not only to Colotes (who has failed to understand earlier philosophers) but also to Epicurus (who has failed to understand the good life, replacing the active life of the ancients—a life centered on parents, gods, and λόγος—with a passive sloth devoted to bestial ἡδονή and unengaged ἀταραξία).

The catalogue of philosophers supporting Plutarch's active life includes several familiar faces: Parmenides gives laws to his πατρίς, laws that endure up to Plutarch's day, at least rhetorically (καθ' ἕκαστον ἐνιαυτὸν ἐξορκοῦν τοὺς πολίτας ἐμμενεῖν τοῖς

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<sup>7</sup> See Sext. *Adv. math.* 7.388-389 (= Democritus, fr. 76 Luria; fr. 181 Taylor; fr. A114 DK).

Παρμενίδου νόμοις; *Adv. Colot.* 1126b); Empedocles delivers his city from corrupt rulers in court and improves the local landscape to defeat barrenness and plague; Socrates exemplifies the supremacy of law by sacrificing his life rather than flee into exile to escape punishment; Melissus leads the navy of his πατρίς to victory over the Athenians; Plato improves on Democritus by leaving behind not only excellent writings on law and government (καλοὺς μὲν ἐν γράμμασι λόγους περὶ νόμων καὶ πολιτείας ἀπέλιπε: *Adv. Colot.* 1126b-c), but also a band of ἑταῖροι whom the partisan Plutarch credits with liberating Sicily (where Dion took power from Dionysius the Younger, tyrant of Syracuse) and Thrace (where Python and Heracleides killed the tyrant Cotys) as well as providing Athens with generals (Chabrias and Phocion) and other Greek states with constitutions and rules for royal government (courtesy of Aristonymus, Phormio, Menedemus, Eudoxus, Aristotle, Xenocrates, and Delius); the last record of achievement goes to Zeno, the pupil of Parmenides, who fails to kill Demylos but is ultimately content to bite off his own tongue and spit it in the tyrant's face, providing an excuse for Plutarch to emphasize the moral of the whole catalogue:

TEXT ( <i>Einarson &amp; De Lacy</i> )	TRANSLATION ( <i>Einarson &amp; De Lacy</i> )
καὶ ἀπέδειξεν ἔργοις ὅτι τὸ αἰσχρὸν ἀνδρὶ μεγάλῳ φοβερόν ἐστιν, ἀλγηδὸνα δὲ παῖδες καὶ γυναῖα καὶ γυναίων ψυχὰς ἔχοντες ἄνδρες δεδίασι	[Zeno] demonstrated by the evidence of deeds that what a great man fears is shame, whereas pain is feared by children and weak women and men with such women's souls  Plut. <i>Adv. Colot.</i> 1126e

The contrast between ancient philosophers' ἔργα and Epicurean ἀταραξία is clear here,

like the contrast between Zeno's indifference to fear and pain and the Epicurean addiction to pleasure. Another rhetorical coup for Plutarch. But where is Democritus? As it happens, he occurs first in the list, where his one notable achievement is to recommend the study of war and the pursuit of hard work (παραινέει τήν τε πολεμικήν τέχνην μεγίστην οὔσαν ἐκδιδάσκεισθαι καὶ τοὺς πόνους διώκειν, ἀφ' ὧν τὰ μεγάλα καὶ λαμπρὰ γίνεται τοῖς ἀνθρώποις; *Adv. Colot.* 1126a). While this contribution is enough to set the Abderite at variance with Epicurus (who has no stomach for πόνοι, πολεμική τέχνη, or the μεγάλα καὶ λαμπρὰ that come from them), it is remarkably tame when compared with the great deeds that come after, and remarkably sparse when compared with even the scraps of moral and ethical thought that survive from Democritus' writings.<sup>8</sup> Why leave those other writings out of the record here? Why omit all reference to Democritus' Nachleben through various students (including at least one, Nausiphanes, who put a positive value on the public life that Plutarch is championing)?<sup>9</sup> The obvious inference to draw is that Democritean ideas might not square nicely with the dichotomy between civilized philosophical life and bestial Epicurean life that Plutarch constructs. As it happens, we have evidence that supports this inference. Among numerous ancient testimonia attesting Democritus' interest in animals are several that compare animals favorably to human in ethical contexts. The most pointed of these is preserved by Plutarch (in a different treatise):

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<sup>8</sup> See Democritus, fr. 595-732 Luria.

<sup>9</sup> For more on the career and teaching of Nausiphanes, see Warren (2002), 160-192.

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
γελοῖοι δ' ἴσως ἐσμὲν ἐπὶ τῷ μανθάνειν τὰ ζῶα σεμνύνοντες, ὧν ὁ Δημόκριτος ἀποφαίνει μαθητὰς ἐν τοῖς μεγίστοις γεγονότας ἡμᾶς· ἀράχνης ἐν ὑφαντικῇ καὶ ἀκεστικῇ, χελιδόνος ἐν οἰκοδομίαι, καὶ τῶν λιγυρῶν, κύκνου καὶ ἀηδόνης, ἐν ᾧδῃ κατὰ μίμησιν.	Perhaps we are ridiculous to make a fuss about animals who can learn, when Democritus shows that in the most important things we have learned from them, spinning and mending from the spider, housebuilding from the swallow, and singing by imitation from songbirds, the swan and the nightingale.  Democritus, fr. 559 Luria = fr. 187a Taylor = fr. B154 DK  Plut. <i>De sollert. animal.</i> 20, p. 974a

This Democritean testimonium takes a positive view of animals, giving them priority over humans in developing some of the more prominent τέχναι characteristic of human civilization. Other testimonia flesh out this assessment, making animals participants with mankind in λόγος (see fr. 448 Luria) and δίκη (see fr. 620-622 Luria), not to mention the business of child-rearing (fr. 562 Luria) and the perception of εἰδῶλα that we call divine (fr. 572 Luria).<sup>10</sup> This positive view of animal nature in Democritean thought contrasts starkly with the position Plutarch takes to oppose Epicurus:

TEXT ( <i>Einarson &amp; De Lacy</i> )	TRANSLATION ( <i>Einarson &amp; De Lacy</i> )
καὶ γὰρ ὁ τῶν θηρίων βίος τοιοῦτός ἐστιν ὅτι τῆς ἡδονῆς οὐδὲν ἐπίσταται κάλλιον οὐδὲ δίκην θεῶν οἶδεν οὐδὲ σέβεται τῆς ἀρετῆς τὸ κάλλος, ἀλλ' εἴ τι θαρραλέον αὐτοῖς ἢ πανοῦργον ἢ δραστήριον ἐκ φύσεως ἔνεστι, τούτῳ πρὸς ἡδονὴν σαρκὸς	Indeed, wild animals lead the kind of life that they do because they have no knowledge of anything higher than pleasure, no conception of divine justice, and no reverence for the intrinsic worth of virtue; they use instead whatever natural

10 τὰ γὰρ αὐτὰ πεποίηκεν εἰδῶλα τοῖς ἀνθρώποις προσπίπτοντα καὶ τοῖς ἀλόγοις ζώοις ἀπὸ τῆς θείας οὐσίας (Clem. *Strom.* 5.88 = fr. 572 Luria). The problem of the divine in Democritean thought is not simple: at the stage, the most we can say is that other testimonia confirm the physical reality of perceptible images commonly identified as being divine (see fr. 472a, 581 Luria).

καὶ ἀποπλήρωσιν ὀρέξεως χρῆται ...	gifts they have of boldness, cunning, or industry to get pleasure of the flesh and satisfaction of the appetite ...  Plut. <i>Adv. Colot.</i> 1125a
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Unlike Democritus' animals, Plutarch's have no part in the philosophical life. Their achievements are vitiated by the fact that they aim for nothing but fleshly ἡδονή (a cut at Epicurus), and they certainly have no share in human λόγος (which inhibits ἡδονή in Plutarch's formulation, as already seen). The only philosophy they can profess is that of Epicurus (recognizable from *Adv. Colot.* 1108c-d):

TEXT ( <i>Einarson &amp; De Lacy</i> )	TRANSLATION ( <i>Einarson &amp; De Lacy</i> )
καὶ ταῦτα τὰ πάθη καὶ τὰ δόγματα λόγων καὶ γραμμάτων ἀπορίαί τὰ θηρία βρυχήμασι καὶ χρεμετισμοῖς καὶ μυκήμασι δηλοῖ, καὶ πᾶσα φωνὴ γαστρός ἐστὶν αὐτοῖς καὶ σαρκὸς ἡδονὴν ἀσπαζομένη καὶ σαίνουσα παροῦσαν ἢ μέλλουσαν, εἰ μὴ τι φύσει φιλόφωνόν ἐστι καὶ κωτίλον.	It is these feelings and these doctrines that the brutes for want of speech and writing express by roars and whinnies and lowings; and every sound they utter serves to welcome and fawn upon present or future pleasure of the belly and the flesh, except for the few who have an inborn love of song and chatter.  Plut. <i>Adv. Colot.</i> 1125b-c

This seems like a rhetorically brilliant position for Plutarch, but it is not as perfect as it looks. First, the proximate source for the πάθη καὶ δόγματα espoused by Plutarch's inarticulate Epicurean beasts is not Epicurus himself but Metrodorus of Chios (καθάπερ οἶεταί δεινὸς σοφὸς Μητρόδωρος; *Adv. Colot.* 1125b), whom Clement of Alexandria (*Strom.* 1.64.4), Eusebius (*Praep. Evang.* 14.17.10), and Diogenes Laertius (9.58) all identify as a Democritean.<sup>11</sup> This raises (and promptly ignores) the fact that the

<sup>11</sup> See fr. lxxxix-lxxxii Luria. The lineage is construed differently by different sources, but it is not hard to

Epicureanism Plutarch ridicules is not exclusively Epicurean: it shares attitudes and outlooks with other worldviews, including worldviews associated with Democritus (who certainly provided its foundations in theoretical physics). Then there is the awkward concession that some beasts “have an inborn love of song and chatter” (εἰ μὴ τι φύσει φιλόφωνόν ἐστι καὶ κωτίλον), a observation that undermines their alleged lack of λόγος (since Plutarch does not distinguish clearly between λόγος as speech and λόγος as rational thought) and recalls Democritus' positive assessment of songbirds. Why include this potentially problematic observation at all? Perhaps Plutarch needed to indicate awareness of atomist positions that he did not want to cross-examine too closely, thus dealing with a Democritus he did not wish to refute—accepting the early atomist's high regard for the active life as an indictment of Epicureanism and fobbing his elevation of animal morality off on Metrodorus (who may have made the hatchet job easier by not explicitly invoking the Abderite in the passage referenced by Plutarch).

Voilà Democritus the paradox: he unites a high view of civilized human activity (which Plutarch here affirms) with a concomitantly high valuation of animal morality (which Plutarch here ignores), thinking like antiquity's earliest Cynic or Epicurean without actually becoming such (since his attitude towards social conventions and political engagement remains more constructive than either of the later positions allows). A civic-minded Stoic or Platonist (like Plutarch) could find common ground with him where his most obvious successors might not.

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reconcile them if we allow that Metrodorus read the atomist's books and associated with more than one of his other acolytes.

### Democritus and the Good Life: Theories of Pleasure (i.3.2)

Democritus' fondness for animals is not the only thing Plutarch casts in the shadows to make the atomist a strong advocate for his philosophical life. He also ignores the Abderite's problematic attitude toward pleasure, an attitude whose Epicurean flavor appears clearly in testimonia like the following:

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
ὄρος συμφορέων καὶ ἀσυμφορέων τέρψις καὶ ἀτερπία. ( <i>Taylor</i> )	Joy and sorrow are the distinguishing mark of things beneficial and harmful. ( <i>Taylor</i> )  Democritus, fr. D26 Taylor = fr. 734 Luria = fr. B188 DK  Stob. 3.1.46
Δημόκριτος δὲ γάμον καὶ παιδοποιῖαν παραιτεῖται διὰ τὰς πολλὰς ἐξ αὐτῶν ἀηδίας ... ( <i>Luria</i> )	Democritus advised against marriage and having children as causing much unpleasantness ... ( <i>Taylor</i> )  Democritus, fr. 723 Luria = fr. 191 Taylor = fr. A170 DK  Clem. <i>Strom.</i> 2.138

Stobaeus quotes Democritus to the effect that pleasure is a definitive characteristic of human reality, and Clement shows how Democritus applies that idea to practical situations, recommending against private entanglements much as Epicurus later recommends against public ones.<sup>12</sup> Before we rush to identify Democritus as a partisan on the side of Colotes, however, we must acknowledge the existence of further

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<sup>12</sup> Other positive valuations of pleasure occur in the Democritean testimonia: for examples, see fr. 748, 751, 757, 786, 788, 790, 795 Luria.

Democritean testimonia which are as ascetic as anything Plutarch writes. One example:

TEXT ( <i>Taylor</i> )	TRANSLATION ( <i>Taylor</i> )
ὅσοι ἀπὸ γαστρὸς τὰς ἡδονὰς ποιέονται ὑπερβεβληκότες τὸν καιρὸν ἐπὶ βρώσεσιν ἢ πόσεσιν ἢ ἀφροδισίοισιν, τοῖσι πᾶσιν αἱ μὲν ἡδοναὶ βραχεῖαι τε καὶ δι' ὀλίγου γίνονται, ὁκόσον ἂν χρόνον ἐσθίωσιν ἢ πίνωσιν, αἱ δὲ λῦπαι πολλαί. τοῦτο μὲν γὰρ τὸ ἐπιθυμεῖν ἀεὶ τῶν αὐτῶν πάρεστι καὶ ὁκόταν γένηται ὁκοίων ἐπιθυμέουσι, διὰ ταχέος τε ἡ ἡδονὴ παροίχεται, καὶ οὐδὲν ἐν αὐτοῖσι χρηστόν ἐστιν ἀλλ' ἢ τέρψις βραχεῖα, καὶ αὖθις τῶν αὐτῶν δεῖ.	Those who take their pleasures from their belly, exceeding what is appropriate in food or drink or sex, to all of them their pleasures are meagre and brief, lasting just so long as they are eating and drinking, and their pains are many. For this desire for the same thing is always with them, even when they get what they desire, and the pleasure soon passes, and they have no profit except brief delight, and then they need the same things again.  Democritus, fr. B235 DK = fr. D99 Taylor = fr. 750 Luria  Stob. 3.18.35

On the one hand, Democritus' disdain for ἡδοναί coming from the γαστήρ is precisely in line with Plutarch's anti-Epicurean polemic (see *Adv. Colot.* 1108c-d). On the other, the positive rhetoric of pleasure that the atomist employs to dismiss gastric ἡδοναί flies in the face of the approach that Plutarch adopts to neutralize Colotes.<sup>13</sup> For Democritus (as for later Epicureans), pleasure is bad when it precludes greater pleasure: as Christopher Taylor (1967) has it, stable accumulation of pleasure trumps momentary experiences of it, no matter how intense the latter may be.<sup>14</sup> This does not fit Plutarch's position against Colotes, which avoids the need to distinguish different kinds of pleasure in the good life

13 In *Adv. Colot.* 1108c-d, λόγος inhibits ἐπιθυμία without distinction, and there is no positive value assigned to ἡδονή (which is at best only morally neutral).

14 The Cyrenaics invert this approach, preferring temporary instances of pleasure to long-term accumulation.



by making all of them unreservedly subject to philosophical λόγος, the governing reason that guarantees the integrity of δίκη and νόμος.<sup>15</sup> In brief, Democritus construes a moral universe where pleasure is a meaningful ὅρος (fr. D26 Taylor); in Plutarch's world, on the other hand, the only important ethical ὅρος is the philosophers' λόγος, rendering pleasure a distraction that is at best neutral, at worst destructive (*Adv. Colot.* 1108c-d, 1124d-1125a). Predictably, given the polemical nature of the *Πρὸς Κωλώτην*, bad pleasure gets a lot more attention from Plutarch than neutral, and Democritus' embarrassing concessions to the Epicurean idea that pleasure might be something good in itself gets swept under the rug without comment.

Voilà Democritus the paradox again: he unites a positive doctrine of pleasure with intense asceticism (combining Plutarch's philistine Epicurus with Parmenidean Zeno the would-be tyrannicide) and once more bridges gaps between later extremes (e.g. indulgent Epicureanism and ascetic Stoicism). He does this without making himself obviously liable to charges of Cyrenaic or Epicurean hedonism (judging from the testimonia and the fact that Plutarch feels safe ignoring his ideas on pleasure in the *Πρὸς Κωλώτην*, where extreme views would demand a more active intervention to save the atomist as an advocate for the philosophical life as opposed to the Epicurean).

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15 See *Adv. Colot.* 1108c-d (quoted above) and 1124d-1125a: ἂν γὰρ ἀνελὼν τις τοὺς νόμους τὰ Παρμενίδου καὶ Σωκράτους καὶ Ἡρακλείτου καὶ Πλάτωνος ἀπολίπη δόγματα, πολλοῦ δεήσομεν ἀλλήλους κατεσθίειν καὶ θηρίων βίον ζῆν· φοβησόμεθα γὰρ τὰ αἰσχρὰ καὶ τιμήσομεν ἐπὶ τῷ καλῷ δικαιοσύνην, θεοὺς ἄρχοντας ἀγαθοὺς καὶ δαίμονας ἔχειν τοῦ βίου φύλακας ἡγούμενοι καὶ τὸν ὑπὲρ γῆς καὶ ὑπὸ γῆν χρυσὸν ἀρετῆς ἀντάξιον μὴ τιθέμενοι καὶ ποιοῦντες ἐκουσίως διὰ τὸν λόγον, ἢ φησι Ξενοκράτης, ἃ νῦν ἄκοντες διὰ τὸν νόμον.

### Solving the Paradox (i.4)

Thus far, my investigation is just a collection of interesting anomalies: a catalogue of ways that Democritus flouts philosophical distinctions applied (none too rigorously) in antiquity. Read against extant fragments of Democritus, the *Πρὸς Κωλώτην* brings these anomalies forward, revealing elements in the early atomist's thought that do not square comfortably with (1) Epicureanism, certainly his most well-known legacy, (2) Cynicism, where he likewise appears to have made a constructive impression,<sup>16</sup> or (3) Skepticism, where his writings found an audience in Pyrrho<sup>17</sup> and Sextus Empiricus.<sup>18</sup> Reading the *Πρὸς Κωλώτην* against the Democritean testimonia shows us how Democritus precedes historical developments that separated pleasure from reason, man from animals, and ethical idealism from physical materialism. But the *Πρὸς Κωλώτην* does more than this: its greatest contribution to the memory of Democritus is to invoke him (albeit none too loudly, since for reasons already discussed he is not Plutarch's best witness) in a practical, commonsense discussion of human life (τὸ ζῆν)—specifically, a discussion of what it means to live well (τὸ εὖ ζῆν: *Adv. Colot.* 1108c-d). The modern ivory tower did not exist in Democritus' day: fifth-century Greek philosophers were men of action, fighting wars, governing cities, and (in Democritus' case) composing books that balanced Aristophanean cloud-walking with a healthy dose of practical know-how.<sup>19</sup> Active

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16 See Stewart (1958).

17 See Diog. 9.67 and von Fritz (1963).

18 See Sext. *Adv. math.* 7.53, 116-117, 135, 137, 138-139, 140, 265, 321, 349, 369, 388-389; 8.6, 56, 184, 327; 9.19, 24, 42, 112-113, 363; 10.181, 252-256, 318; *Pyrrh. hypot.* 1.23; 2.23, 63; 3.32.

19 Note the titles collected under the rubric *technical works* (τεχνικά) in the Thrasyllan booklist (Diog. 9.48 = fr. cxv Luria) as well as Plutarch's reference to his writings on war and politics (*Adv. Colot.* 1126a).

varieties of the human life were not a purely theoretical concern for these men (a point which Plutarch exploits to good effect against Colotes). The *Πρὸς Κωλώτην* provides important insights into the active philosophical life of the fifth century. Consider the following assessment of Parmenides:

TEXT ( <i>Einarson &amp; De Lacy</i> )	TRANSLATION ( <i>Einarson &amp; De Lacy</i> )
ὅς γε καὶ διάκοσμον πεποίηται, καὶ στοιχεῖα μινγὺς τὸ λαμπρὸν καὶ σκοτεινὸν ἐκ τούτων τὰ φαινόμενα πάντα καὶ διὰ τούτων ἀποτελεῖ. καὶ γὰρ περὶ γῆς εἴρηκε πολλὰ καὶ περὶ οὐρανοῦ καὶ ἡλίου καὶ σελήνης καὶ ἄστρον καὶ γένεσιν ἀνθρώπων ἀφήγηται καὶ οὐδὲν ἄρρητον, ὥς ἀνὴρ ἀρχαῖος ἐν φυσιολογίαι καὶ συνθεῖς γραφὴν ἰδίαν, οὐκ ἄλλοτρίαν διαφορῶν, τῶν κυρίων παρῆκεν.	He [Parmenides] has actually made a cosmic order, and by blending as elements the light and the dark produces out of them and by their operation the whole world of sense. Thus he has much to say about earth, heaven, sun, moon, and stars, and has recounted the genesis of man; and for an ancient natural philosopher—who has put forward a book of his own, and is not pulling apart the book of another—he has left nothing of real importance unsaid.  Plut. <i>Adv. Colot.</i> 1114b-c

Parmenides is credited with a written account of the world, including the genesis of man. Plutarch calls this work a *διάκοσμος*, and finds it typical of an ancient natural philosopher (ἀνὴρ ἀρχαῖος ἐν φυσιολογίαι), indicating that it stands in a tradition. In the context of our current discussion, this immediately calls to mind two physics books credited to Democritus in the Thrasyllan booklist preserved by Diogenes Laertius (9.46): the *Μέγας διάκοσμος* (which Theophrastus' disciples ascribe to Leucippus) and the *Μικρὸς διάκοσμος*. Ancient doxography has the former work as his best (ἀπάντων τῶν αὐτοῦ συγγραμμάτων προέχει), noting that it earned his estate some income from public reading (Diog. 9.39). Impossible as it is to say anything definitive about the content or

authorship of either διάκοσμος (besides noting that Thrasyllus puts them among τὰ φυσικά in the corpus ascribed to Democritus), it is hard not to see them as parallel to the Parmenidean διάκοσμος referred to by Plutarch. Presumably, given Plutarch's assertion that Parmenides' work left nothing important unsaid (οὐδὲν ἄρρητον ... τῶν κυρίων παρήκεν), that work was not wholly unrelated to the νόμοι ἄριστοι that were the Eleatic's greatest legacy to posterity. Plutarch lends deliberate strength to this presumption: Παρμενίδης δὲ τὴν ἑαυτοῦ πατρίδα διεκόσμησε νόμοις ἄριστοις (*Adv. Colot.* 1126a-b). Granting Plutarch's assertion that Parmenides wrote a διάκοσμος with ethical implications, is it not at least likely that at least one of the Democritean διάκοσμοι came similarly endowed? As an ἀνὴρ ἀρχαῖος ἐν φυσιολογίαι, is it not likely that Democritus (and/or Leucippus) would have concerned himself with the business of human life as assiduously as he treated the physical principles that make it possible?

Plutarch strengthens the case for a solid pre-Socratic nexus between (practical) ethics and (theoretical) physics when he identifies the single, overarching question asked by πάντες οἱ φύσικοι (*Adv. Colot.* 1119b):

TEXT ( <i>Einarson &amp; De Lacy</i> )	TRANSLATION ( <i>Einarson &amp; De Lacy</i> )
φέρει τίς ὦν οὗτος ὁ ἐγὼ τυγχάνω; πότερον ὡς κράμα, τὸ μειγμένον ἔκ τε τῆς ψυχῆς καὶ τοῦ σώματος, ἢ μᾶλλον ἢ ψυχὴ τῷ σώματι χρωμένη, καθάπερ ἵππευς ἀνὴρ ἵππῳ χρώμενος, οὐ τὸ ἐξ ἵπου καὶ ἀνδρός; ἢ τῆς ψυχῆς κυριώτατον, ᾧ φρονοῦμεν καὶ λογιζόμεθα καὶ πράττομεν, ἕκαστος ἡμῶν ἐστί, τὰ δὲ λοιπὰ καὶ ψυχῆς μόρια πάντα καὶ σώματος ὄργανα τῆς τούτου	Let me see now, what am I in fact, this thing called I? Am I like a blend, the combination of this soul with this body? Or am I rather my soul using my body, as a horseman is a man using a horse, not a compound of horse and man? Or is each of us not the soul, but the chief part of the soul, by which we think and reason and act, all the other parts of soul as well as body being mere instruments of its power? Or is

δυνάμεως; ἢ τὸ παράπαν οὐκ ἔστιν οὐσία ψυχῆς ἀλλ' αὐτὸ τὸ σῶμα κεκραμένον ἔσχηκε τὴν τοῦ φρονεῖν καὶ ζῆν δύναμιν;	there no substance of soul at all, and has the body unaided acquired by its composition the power of thought and life?  Plut. <i>Adv. Colot.</i> 1119a-b
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This question resonates strongly with the Democritean corpus. The fifth-century CE grammarian Orion of Thebes and a Homeric scholiast record that the atomist interpreted the divine name Athena Tritogeneia as referring to the trilogy of proper thought, speech, and action,<sup>20</sup> echoing the part of Plutarch's question that wonders whether we are the governing part of our ψυχή, the part “by which we think and reason and act” (ὧ φρονοῦμεν καὶ λογιζόμεθα καὶ πράττομεν). The Thrasyllan booklist includes a treatise entitled Τριτογένεια among the ethical writings of Democritus; this treatise is glossed as containing three things from the goddess which comprise all of human affairs (τρία ... ἐξ αὐτῆς ἃ πάντα ἀνθρώπινα συνέχει: Diog. 9.46). It is difficult not to conclude that this book dealt on some level with the human question Plutarch finds central to the early Greek science practiced by φύσικοι.

The foregoing gives us reason to suspect that Democritus was concerned (at least practically) with ethics, and that he treated ethics from a standpoint informed by his physics (which like their Parmenidean counterpart construed a διάκοσμος with moral implications for man). For historical reasons, this suspicion has not been exhaustively

20 Τριτογένεια ἢ Ἀθηνᾶ κατὰ Δημόκριτον φρόνησις νομίζεται. γίνεται δὲ ἐκ τοῦ φρονεῖν τρία ταῦτα: βουλευέσθαι καλῶς, λέγειν ἀναμαρτήτως καὶ πράττειν ἃ δεῖ (*Etym. Orion.* 153.5). Δημόκριτος δὲ ἐτυμολογῶν τὸ ὄνομα [Τριτογένεια] φησιν, ὅτι ἀπὸ τῆς φρονήσεως τρία ταῦτα συμβαίνει: τὸ εὖ λογίζεσθαι, τὸ εὖ λέγειν καὶ τὸ πράττειν ἃ δεῖ (*Schol. Genev.* 1.111 Nicole = Democritus, fr. 822 Luria).

investigated by modern scholarship. The primary impediment to investigation has been the disorganized survival of Democritus, whose historical remains are scattered thin over a wide range of ancient authors that cite him piecemeal to make divergent points of their own. Philosophers outside atomist tradition (like Aristotle, Theophrastus, and Sextus Empiricus) cite him to make their own philosophical arguments. Within his tradition, Epicurus cites him only to correct his physics (as being overly deterministic), and builds his own ethics around the non-Democritean idea of the atomic swerve. Doctors (like Galen) and natural historians (like Aelian) cite him to make physiological (physical, biological) arguments. Moralists (like Stobaeus) cite him to make ethical arguments. Inevitably, any original unity in the Democritean concept of the universe (διάκοσμος) is obscured—not because it was never there, but because later authors do not need it to make their own arguments (which come from worldviews that are not Democritean, for all that they may resemble the Democritean διάκοσμος in certain aspects).

Picking up where Democritus' ancient readers left off, modern scholarship has been understandably hesitant to unify all the little pieces of the early atomist διάκοσμος scattered among the literary remains of antiquity. Historically, modern readers of Democritus show a tendency to fall into two camps. Some scholars have found it profitable to make Democritean ethics (and the considerable collection of Democritean ethical fragments) a field unto itself, unique and separate from early atomist physics.<sup>21</sup>

21 E.g. Dyroff (1899), Zeller (1919-1923), Bailey (1928), Alfieri (1936), Stella (1942), Mesiano (1951), Colvin (1974), Procopé (1989, 1990), Taylor (1967, 1999, 2007), Lanzillota (2001). Scholars who separate ethics and physics in early atomism do so in different ways, for different reasons. According to Dyroff, Zeller, Bailey, and Alfieri, Democritus never imagined any continuity between physics and ethics: any continuity apparent in the fragments is purely specious, an accident that we should not take seriously. According to Mesiano and Stella, Democritus originally envisioned physics and ethics as a

Others have looked for evidence of continuity in early atomist thought about physics and ethics.<sup>22</sup> There has been some dialogue between the two camps, e.g. when Taylor (1967) attempted to debunk Vlastos (1945, 1946),<sup>23</sup> but no consensus has been reached. It has even been stated that the problem (of defining the relationship between early atomist physics and ethics) is insoluble.<sup>24</sup> I do not believe this. To me it seems that we stand on the brink of an important synthesis: over the past two centuries modern scholarship has carefully sifted all that remains of the early atomists' legacy (in physics and ethics and all the other sciences to which they contributed), and we are at last ready to begin putting the fragments together as they originally fit—not only with one another, but with the broader cultural milieu in which they grew up (a milieu which produced more than one διάκοσμος as different Greek thinkers grappled with the problem of how to explain existence).

Toward the accomplishment of that synthesis, I offer this study.

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unity and approached both from the same first principles, but then contradicted himself when his investigation revealed a physics denying free will and an ethics demanding it. (Notice how well this interpretation lends itself to a vindication of Epicurus, who solves the contradiction that stumps Democritus.) Colvin, Procopé and Lanzillota avoid the problem by ignoring atomist physics and concentrating entirely on ethics—though Colvin does offer a small appendix discussing the disagreement between Vlastos (1945, 1946) and Taylor (1967). My study takes many valuable insights from all these scholars, but it rejects their conclusion (where offered) that ethics and physics were separate matters for the early atomists, and it challenges the Epicurean narrative that Democritean atomism necessarily created the dichotomy between absolute physical determinism and ethical free will that Epicurus solved with the swerve.

22 E.g. Natorp (1893), Reinhardt (1912), Uxkull-Gyllenband (1924), Vlastos (1945, 1946), Mugler (1959), Luria (1964), Cole (1967), Sassi (1978), Mueller (1980), Thrans (1986), Warren (2002). These scholars all see the early atomists positing the existence of a physical world whose natural characteristics give rise inevitably to certain moral patterns (including human beings and societies). My study follows this tradition of thought in modern scholarship, with special thanks to Cole, Mueller, and Thrans, whose readings of several key texts coincide with my own.

23 When Sassi (1978) accepted Vlastos (1945, 1946) over his original objections, Taylor (1999) offered another rebuttal (this one more cautious) to those who see atomist physical doctrine lurking behind Democritean ethical fragments in any cogent or explicit manner.

24 Thus Warren (2002, 72).

The distinguishing feature of my work is its historical approach to the διάκοσμος that features so prominently in the titles of early atomist books. My first and second chapters explore the historical milieu in which the early atomist διάκοσμος arises and takes shape, showing that it is merely one of many articulate world-orders created by Greek thinkers prior to and contemporary with Leucippus and Democritus. My third and fourth chapters build on the first and second to situate early atomist physics and ethics properly relative to one another. In my view, the early atomists follow established tradition in positing a world-order with certain constants and/or inconstants that obtain universally (crossing all boundaries posed by human understanding, including the boundaries that we moderns point to with words like *ethics* and *physics*). Recognizing this fact explicitly allows me to formulate a much clearer idea of early atomist thought than I have found elsewhere, and to offer what I believe is the most thorough and thoroughly integrated reading of the early atomist corpus to date.<sup>25</sup> In simple terms, when we put the early atomist διάκοσμος together using prior and contemporary διάκοσμοι as a guide, Democritus the man makes a good deal of sense—and Democritus the paradox is revealed to be a straw man created by later authors (whether modern or ancient) more interested in their own arguments than in early atomism.

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25 The well-read student will find my interpretation of early atomist physics and psychology anticipated in Mugler (1959) and Vlastos (1945, 1956), and hammered out at greater length in Sassi (1978). He will see my perspective on material necessity anticipated in Cole (1967), Mueller (1980), and Drozdek (2007). He will see my understanding of atomist happiness anticipated by Lanzillota (2001). But he will not find any historical study of the entire early atomist διάκοσμος as explicit and comprehensive as mine, which is the first (that I am aware of) to treat Democritean ethics and physics as a unity whose continuity does not necessarily require the swerve of Epicurus to make sense.



## CHAPTER 1. BEFORE THE ATOMISTS

### Introduction: Context (1.1)

Every human artifact comes from a particular cultural environment, a unique confluence in time and space. When confronted with an unfamiliar artifact, particularly something as complicated and wrought as a written text, scholars in the classical tradition historically make every effort to place it in the context where it originated, examining its relationship to the unique set of spatio-temporal circumstances that called it into being. Even if a careful examination of these circumstances fails to reveal the original purpose of the artifact perfectly, it can restrict the field of possible uses, separating blatantly anachronistic interpretations of the artifact from interpretations that are at least plausible. Then a history of the artifact can be constructed, showing its reception from creation to the present and tracing the evolution of its use over time.

Unfortunately, the textual artifacts created by Democritus exist only as scattered fragments quoted or summarized by later authors. Naturally, these authors present the ideas of Democritus in terms that make sense to them (not necessarily to the atomist or his original public), and it is not always obvious where interpretation overshadows the original thought. There is also the problem of false attribution: some people took nothing more from Democritus than his name, attempting to claim the authority of a well-published ancient for their own work rather than let the latter stand alone on its merits (Diog. 9.49). In this situation, with only pieces of our original artifacts extant and those pieces mingled with foreign material, contextualization is still the best interpretive

strategy. The more we know about the situation in which Democritus wrote, the more sense authentic remnants of his thought will make for us, and the nearer that sense will approach the author's original meaning (before latecomers adapted it to suit their own disparate ends). This requires two things: (1) a general idea of the immediate cultural environment that Democritus inhabited (fifth-century Abdera and its environs); and (2) a more specific idea of the larger philosophical tradition (starting with Thales in the sixth century) in which Democritus stands.<sup>1</sup> Having a clear picture of the circumstances that gave birth to Democritean atomism will ground this study, focusing attention on matters significant to the original author (and so helping me to identify his ideas in the received corpus of fragments and interpret them as he or one of his first readers might have done). This will minimize the authority allotted to extraneous, inauthentic material (whether later interpretation or interpolation) and ensure the historical plausibility of my reconstruction of the early atomist's thought.

### **Fifth-century Abdera (1.2)**

Located near the mouth of the river Nestus on the Thracian seaboard, fifth-century Abdera occupied an important position in the web of cultural exchange connecting the Greek peoples (and their trading partners) to neighboring Thracians and Macedonians. The πόλις Democritus knew was one of at least two foundations on a geographically attractive region (furnished with two harbors, plenty of fresh water, fertile earth for cultivating grain, and a rich supply of silver and gold). The city's name suggests a Phoenician origin (perhaps a trading post), and the historical record includes a failed

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<sup>1</sup> I refer to this tradition throughout as the Critical Tradition. See section 1.3 below.

seventh-century colony from Clazomenae (destroyed by Thracians) before the colony from Teos that created Democritus' hometown in the sixth century (*circa* 544 BCE).<sup>2</sup> In Democritus' day (before the fourth century), Abderan silver was coined and circulated widely: it appears in Egypt, Syria, Mesopotamia, and even further afield, showing that Democritus' Abdera was well-connected to long-distance, cross-cultural trade networks.<sup>3</sup> Relations with the Persians were diffident: on the one hand, Abdera owed its second foundation to the Tean colonists' determination to avoid submitting to Cyrus II, and the colony maintained a very close relationship with her metropolis (which participated in the Ionian Revolt that began in 499).<sup>4</sup> On the other hand, when Xerxes I brought his army across the Hellespont to invade the Peloponnesus in the year 480, he bivouacked in Abderan territory (Herodot. 7.120) and made a solemn pact of friendship (ξεινίη) with the city during his retreat (Herodot. 8.120).<sup>5</sup> This agreement did not stop Democritus' fellow-citizens from joining the Delian League, where their yearly contribution put them among the richest Athenian tributaries;<sup>6</sup> and in 431, the Abderite Nymphodorus helped to increase Athenian power in the region even further by brokering a treaty between Athens and the Thracian king Sitalces (Thuc. 2.29). It is unclear whether Abdera remained

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2 Herodot. 1.168; Graham (1992), 44-53; Freeman (1950), 221-239; *OCD* s.v. "Abdera."

3 May (1966), 1-4. May interprets Egyptian finds as emanating from Ionian traders at Naucratis (who exchanged silver for grain imported by the Ionian cities of Asia Minor) and speculates that Syrian and Mesopotamian finds may have come through Tyre and Sidon with Greek or Phoenician traders. The most distant finds come from modern Afghanistan, where it appears they were brought by Persians (like Darius I, who included an Abderan tetradrachm in the foundation deposit of the Apadana in Persepolis).

4 Graham (1992).

5 The Abderites reported that the king sealed this agreement with gifts (a golden sword and tiara), following long-standing Greek custom (e.g. Homer, *Il.* 6.215-236).

6 Graham (1992), 59-62; *OCD* s.v. "Abdera." Abdera's tribute was regularly 15 talents until it was reduced to 10 in 432/1. It may also have been paying tribute to the Odrysian kingdom (Thracian) at the same time.

faithful to Athens for the duration of the Peloponnesian War: all we know is that the city started minting coins to a Peloponnesian standard in the year 411 (after the rebellion of Athens' Ionian allies that began at Chios in 412).<sup>7</sup> Leaving the fifth century behind, Abdera survived being sacked by Thracians (in 375)<sup>8</sup> to become part of the empire ruled by Philip I of Macedon.<sup>9</sup> What little we know of the political institutions of Abdera throughout this period makes it a typical πόλις, with legal procedures for allocating periodic magistracies (including important local priesthoods) and some kind of popular assembly controlling at least the courts.<sup>10</sup>

The foregoing locates Democritus in a cultural environment that is at once diverse and dynamic. Seen in terms of diversity, it includes multiple locations (some as near Abdera as the neighboring Thracian court, some as far away as Athens, Egypt, or Persepolis), multiple ethnicities (Greek, Thracian, Macedonian, and Persian, as well as others), and many different sources of culture (artifacts and people from all over the ancient near East). Seen in terms of power, it is precarious: the balance of power in Abdera belongs to no person or persons for more than a few years, and it does not require much to upset the *status quo*, filling the city with armed Persians, Thracians, or Greeks allied with different internal political factions. The threat of annihilation, already present

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7 May (1966), 177-183. This has been interpreted by some to indicate that Abdera joined the revolt, but until further evidence appears this is merely speculation.

8 The invaders (Triballians) were not Abdera's Thracian allies (Odrysians), but some accounts of the conflict have these allies deserting at a crucial moment, assuring the invaders' victory. The Athenian general Chabrias was instrumental in putting the city back on its feet; under his tutelage, Abdera joined the Second Athenian League. See Freeman (1950); May (1966), 241-242, 266.

9 May (1966) supports the consensus that Philip acquired Abdera during the Thracian campaign that followed his taking Olynthus in 348 (286-287).

10 Graham (1992), 53-57; Liddel (2010), 120.

in the tale of the original colony from Clazomenae, is never absent. In this situation, it is not always clear what words and gestures mean: solemn friendship with the Persian king, or the Thracians, or Athens might be a serious undertaking or a political feint, a democratic motion from the people or the decision of a powerful aristocrat like Nymphodorus. This will be an important point to keep in mind.

### **The Critical Philosophical Tradition (1.3)**

In many ways, the story of the philosophical tradition that enters history with Thales (referred to from this point forward as the Critical Tradition)<sup>11</sup> is the story of Democritus writ large. First, a word about background. As far back as the historical record extends, the world of the Greeks is diverse and precarious (like Abdera), defined by continuous conflict between Greeks, other Greeks, and different tribes of barbarians struggling to control valuable ports along the coasts of the Euxine, the Aegean, and the Mediterranean Seas. This diffuse struggle between rival seafaring folk appears already in the Homeric poems that contain our earliest written representations of that world, and it shows up again in the histories of Herodotus and Thucydides, where its most destructive effects are amply recorded. But this enduring conflict was creative as well, driving the curious (and the desperate) to discover new lands, new markets, new cultural artifacts, and a new public to enjoy these inventions. The universe of the Greeks was always

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11 The modern word *pre-Socratic* says little about those it purports to describe. I had thought of calling them *Ionians*, but the traditional distinction between Ionian and Italian schools of early philosophy renders this epithet problematic. Following ancient precedent (e.g. Aristot. *Metaph.* 986b14, 1005a34), I could have called them φυσιόλογοι or φυσικοί, but these words come loaded with interpretive freight that I am not certain I wish to carry here. Thus I have decided to call the first philosophers *Critical*, an epithet which accurately captures their interaction not only with one another but with the world in general (especially the Greek world, where they competed with poets, orators, and eventually prose authors, whose work they judged critically).

expanding, moving west, north, and east along trade-routes old and new toward the unseen boundaries of the world. This expansion brought the Greeks into continuous contact with new lands, plants, animals, peoples, and gods. It also gave them access to great wealth, which, when it was not being plundered, facilitated the evolution of new forms of culture, including some forms not immediately necessary for survival (though they might ultimately prove useful in that regard).<sup>12</sup> The Critical Tradition came into being in this realm of novel culture, mediating between the old cultural forms of the ancestral Greeks and the new forms emerging from modern circumstances. The essential problem the tradition faced was one of too much information: as the Greek universe expanded beyond its old limits, old maps of reality needed to be redrawn to match modern discoveries.

For the original Critical philosophers, the expanding world they inhabited was more than just a geographic or historic novelty: it challenged their understanding of the universe in fundamental ways, leading them to look critically at the meaning of old words and carefully consider the nature of the reality those words were intended to indicate.<sup>13</sup> Revising the particular conceptual map(s) of reality that they carried meant evaluating the constituent parts from which such maps are generally made. This meant asking difficult questions: In a world characterized by constant novelty (the byproduct of political and

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12 The minutely researched portrait of Phocaea and her colony Elea provided by Kingsley (1999), 11-24, 237-238, provides an excellent individual instance of the general Ionian experience passing from the Archaic Age to the Classical. Note the similar reciprocal relationship between Teos and Abdera.

13 See e.g. Democritus, fr. 563 Luria (= Proclus, *in Crat.* 5.25), which contrasts Pythagoras' understanding of diction (that words have intrinsic meaning) with that of Democritus (who maintains that they have not). Other testimonia confirm that these were not the only thinkers in the Critical Tradition who self-consciously dealt with the relationship between language and meaning; see e.g. Heraclitus, fr. 14, 21, 39, 84 Marcovich; Parmenides, fr. 8.37 Coxon; Empedocles, fr. 22 Inwood.

cultural evolution), what is real? How do new things (lands, plants, animals, peoples, gods) come into being and pass away? Where do we draw the boundary between change and continuity? How do we deal with uncertainty on a practical level? What is the proper relationship between individual and city, subject and ruler, rich and poor, learned and ignorant, stranger and citizen? The Greeks were certainly not the first to grapple with questions like these, but a number of historical factors separate their inquiry from others before it.

From our modern perspective, the most important of these factors was the fortuitous invention of the Greek alphabet. Whereas their predecessors in the Near East made use of cryptic writing that required considerable time to master and did not faithfully represent spoken language, the Greeks were fortunate enough (perhaps owing to the widespread song culture that produced Homer and Hesiod) to create a writing system that was at once easy to master (with only a few simple characters instead of hundreds of increasingly complicated glyphs) and a relatively transparent map of spoken language.<sup>14</sup> This innovative technology has stood the test of time, allowing successive generations ongoing access to ideas in the Critical Tradition (which remains an object of study today largely because of what ancient and less ancient thinkers have written about it). As we prepare to examine some of this material in detail, it is important to remember that the Critical Tradition was historically much more than just a written tradition. Some of its most important exponents, men like Thales (traditionally the first philosopher) and

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<sup>14</sup> See Powell (2009), 227-244. In the eighth century, Greek became the first language in which one could read words without already knowing them. (The West Semitic characters that the Greeks used to create their alphabet did not include the vowels necessary to indicate how a word was pronounced.)

Pythagoras (the most famous), produced no written work (as far as we know). Oral teaching was very important, as was unmediated personal contact between practitioners (who were frequently accomplished travelers).<sup>15</sup> While we cannot directly access these admittedly important sources of cultural information in the Critical Tradition, we can consult the body of extant written texts that preserve some account of it. Some of these texts go back to original written works composed by Critical thinkers; others preserve records of oral teachings remembered. Unfortunately, none of the original Critical writings has survived wholly intact; this leaves us dependent on outsiders for quotations, summaries, and commentary.

In the balance of this chapter, I delve into the received record of the Critical Tradition, conducting a close examination of several thinkers who worked within it before the early atomists. The Critical thinkers selected for review here anticipate the early atomists in important ways, providing comparative material useful for evaluating what the historical record tells us about Leucippus and Democritus and the unique vision of reality that they created. In the received record of the Critical Tradition before the early atomists, we see historical issues and approaches that informed the atomists' work.

### **Anaximander (1.3.1)**

Ancient tradition remembers Anaximander of Miletus (c. 610-c. 547/6) as one of the first published authors in the Critical Tradition (Diog. 2.2; Agathem. 1.1; Them. *Or.* 36, p. 317 = fr. 1, 6-7 DK), and modern scholarship has confirmed him as the first on

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<sup>15</sup> For an overview of the importance of oral tradition in the Critical Tradition, see the discussion of Pythagorean ἀκούσματα in Burkert (1972), 166-192. For the importance of travel in the Ionian tradition, see Leshner (1992), 3 (Xenophanes); Kingsley (1994), 1-5 (Pythagoras and the early Pythagoreans); Naddaf (2005), 64 (Anaximander); Montiglio (2005), 100-105.



record with a text *Περὶ φύσεως* (though the originality of the title is disputed).<sup>16</sup> Even though this text is no longer extant, we know several things about it. (a) It was written in prose rather than poetry (the more ancient medium for discussing questions of ultimate reality).<sup>17</sup> (b) It constructed an account of the world.<sup>18</sup> (c) It explained material phenomena—τὰ ὄντα (“the things that are”)—as secondary products of a primary material entity (ἀρχή) that Anaximander called τὸ ἄπειρον (*Simpl. in Phys.* 24.13 = fr. B1 DK). (d) It used ethical language to describe how material things relate to one another after taking their being from τὸ ἄπειρον:

TEXT (DK)	TRANSLATION (KRS)
ἐξ ὧν δὲ ἡ γένεσις ἐστὶ τοῖς οὖσι, καὶ τὴν φθορὰν εἰς ταῦτα 'γίνεσθαι κατὰ τὸ χρεών· δίδοναι γὰρ αὐτὰ δίκην καὶ τίσιν ἀλλήλοις τῆς ἀδικίας κατὰ τὴν τοῦ χρόνου τάξιν' ποιητικωτέροις οὕτως ὀνόμασιν αὐτὰ λέγων.	And the source of coming-to-be for existing things is that into which destruction, too, happens, 'according to necessity; for they pay penalty and retribution to each other for their injustice according to the assessment of Time,' as he describes it in these rather poetical terms.  Anaximander, fr. A9, B1 DK = fr. 110 KRS  <i>Simpl. in Phys.</i> 24.13, 17

The doxographical record contains several testimonia purporting to set forth in more detail the original argument that held points (b), (c), and (d) together. These testimonia have been correlated multiple times by modern scholars, yielding competing reconstructions of the details surrounding Anaximander's central thesis (point c).<sup>19</sup>

<sup>16</sup> Kahn (1960), 7; Naddaf (2005), 17.

<sup>17</sup> Hahn (2001), 55-66; Naddaf (2005), 63.

<sup>18</sup> λόγον ... περὶ φύσεως συγγεγραμμένον (*Them. Or.* 36 p. 317 = fr. A7 DK).

<sup>19</sup> See esp. Kahn (1960), who lays out the most extensive passages side by side (28-71).

Naddaf (2005) divides these reconstructions into four types: mythical (supported by Tannery, Diels, Heath, Burnet, Robin, Cornford, Sambursky, Rescher, Guthrie, Burkert, West, and Furley); astronomical (supported by Burch, Baccou, Kahn, Conche, and Couprie); architectural (supported by McEwen and Hahn); and political (supported by Gomperz and Vernant).<sup>20</sup> All reconstructions wrestle with the repeating occurrence of numbers that give the dimensions of the universe. (Some scholars read these numbers as mythical projections, some as astronomical or architectural or political calculations.) Despite these differences, there is general consensus (1) that Anaximander wrote about the origin and development of the universe, possibly describing it as a growing plant;<sup>21</sup> (2) that he composed an account of the origin of animal life;<sup>22</sup> and (3) that that account included speculation on the origins of man.<sup>23</sup> This information will be important.

One of the most important doxographical testimonia available comes from pseudo-Plutarch summarizing Theophrastus (c. 372-c. 288). It is worth quoting in full:

TEXT (DK)	TRANSLATION (KRS, Naddaf)
Ἀναξίμανδρον ... τὸ ἄπειρον φάναι τὴν πᾶσαν αἰτίαν ἔχειν τῆς τοῦ παντὸς γενέσεώς τε καὶ φθορᾶς, ἐξ οὗ δὴ φησι τοὺς τε οὐρανοὺς ἀποκεκρίσθαι καὶ καθόλου τοὺς ἅπαντας ἀπείρους ὄντας κόσμους. ἀπεφίνατο δὲ τὴν φθορὰν γίνεσθαι καὶ πολὺ πρότερον τὴν γένεσιν	[KRS] Anaximander ... said that the <i>apeiron</i> contained the whole cause of the coming-to-be and destruction of the world, from which he says that the heavens are separated off, and in general all the worlds, being <i>apeirous</i> (innumerable). He declared that destruction, and much earlier coming-

20 For bibliographical references, see Naddaf (2005), 79-86 (with notes).

21 KRS fr. 101-121, 122-124; Baldry (1932); Conche (1991), 142; Hahn (2001), 192-194; Naddaf (2005), 72-73.

22 KRS fr. 133-137; Kahn (1960), 68-69; Lloyd (1970), 17-18; Naddaf (2005), 88-90.

23 KRS fr. 133-137; Kahn (1960), 69-71; Lloyd (1970), 17-18; Naddaf (2005), 88-92. According to the doxographers, Anaximander imagined biological life originating in the water with primitive, fish-like creatures encased in thorny bark. These creatures emerged onto dry land, burst (as they dried out), and produced the first animals and the first human beings (who were born as fully-fledged adults).

<p>ἐξᾰπείρου αἰῶνος ἀνακυκλουμένων πάντων αὐτῶν. ὑπάρχειν δέ φησι τῷ μὲν σχήματι τὴν γῆν κυλινδροειδῆ, ἔχειν δὲ τοσοῦτον βάθος ὅσον ἂν εἴη τρίτον πρὸς τὸ πλάτος. φησὶ δὲ τὸ ἐκ τοῦ αἰδίου γόνιμον θερμοῦ τε καὶ ψυχροῦ κατὰ τὴν γένεσιν τοῦδε τοῦ κόσμου ἀποκριθῆναι καὶ τινα ἐκτούτου φλογὸς σφαῖραν περιφυῆναι τῷ περὶ τὴν γῆν ἀέρι ὡς τῷ δένδρῳ φλοιὸν ἥστινος ἀπορραγείσης καὶ εἰς τινὰς ἀποκλεισθείσης κύκλους ὑποστῆναι τὸν ἥλιον καὶ τὴν σελήνην καὶ τοὺς ἀστέρας. ἔτι φησὶν, ὅτι κατ' ἀρχὰς ἐξ ἁλλοειδῶν ζώων ὁ ἄνθρωπος ἐγεννήθη, ἐκ τοῦ τὰ μὲν ἄλλα δι' ἑαυτῶν ταχὺ νέμεσθαι, μόνον δὲ τὸν ἄνθρωπον πολυχρονίου δεῖσθαι τιτηνῆ-σεως διὸ καὶ κατ' ἀρχὰς οὐκ ἂν ποτε τοιοῦτον ὄντα διασωθῆναι.</p>	<p>to-be, happen from infinite ages, since they are all occurring in cycles. He says that the earth is cylindrical in shape, and that its depth is a third of its width. [Naddaf] He states that what produces hot and cold (i.e. a germ) was secreted from (or separated/ejected from) the eternal vital force [KRS: from the eternal] during the generation of the universe, and from this (i.e. the germ) a sort of sphere of flame grew round the air/mist surrounding the earth, like bark round a tree. When this (i.e. the flame) was broken off and shut off in certain rings, the sun, the moon and the stars were formed. [KRS] Further he says that in the beginning man was born from creatures of a different kind; because other creatures are soon self-supporting, but man alone needs prolonged nursing. For this reason he would not have survived if this had been his original form.</p> <p>Anaximander, fr. A10 DK = fr. 101c, 121, 134 KRS</p> <p>[Plut.] <i>Strom.</i> 2</p>
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Here the discussion of earth's shape (and the vexed problem of the cosmic numbers) appears as an elaboration (not strictly necessary) of a simpler underlying idea. In the universe imagined here, τὸ ἄπειρον spontaneously produces a seed (τὸ γόνιμον) that give birth to physical opposites (θερμοῦ τε καὶ ψυχροῦ) whose interaction creates endless orders (κόσμοι) like the material world the Greeks lived in.<sup>24</sup> In that plastic world (with

<sup>24</sup> Kahn (1960, 33-35, 46-53) and KRS (fr. 111-114) point out that the idea of cosmic infinity is unclear before the atomists (who become its most vigorous proponents and may have colored later discussions of it, especially in Theophrastus). Still, Kahn concedes sequential cosmic infinity to Anaximander (world succeeding world forever), and KRS ultimately (p. 126) leaves the door open to the existence of some kind of cosmic infinity in Anaximander's worldview. This demonstrates that the origin of cosmic infinity in the Ionian tradition remains unclear: it need not have originated with the atomists.

its new lands, plants, animals, peoples, and gods), individual material things are temporary, subject to birth and death, but the iterating cycle of generation and destruction (ἀνακυκλουμένων πάντων αὐτῶν) that these things describe depends upon a material infinity (ἐξ ἀπείρου αἰῶνος) that is eternal (fr. A10 DK). Thus temporary phenomena become manifestations of an eternal reality following rules that may be likened to the customs governing human δίκη and τίσις (fr. B1 DK). This metaphor (the closest thing we have to a verbatim quote from Anaximander)<sup>25</sup> raises an important question: *where do δίκη and τίσις belong in the Anaximandrian cosmic narrative?* or in other words, *what is the relationship between ethics and physics in Anaximander's world?*

A final answer is impossible, given the fragmentary state of the evidence, but recent scholarship suggests that the question was at least part of Anaximander's conscious thought, and that as such it may have found some kind of treatment in his written work. The strongest documentary support for this position comes from Anaximander's attested interest in cartography (Agathem. 1.1; Strabo 1.7 = fr. AK DK) and colonization (Ael. *V. h.* 3.17 = fr. A3 DK).<sup>26</sup> In addition to being the author of the first attested map of the Greek world (fr. A6 DK), the Milesian is remembered as a geometer who made the earth the center of his universe because it maintained an equal distance from all things outside it and so avoided the control of any one of them (Aristot. *De caelo* 2.13.295b 10; Hippol. *Refut.* 1.6.3 = frr. A26, A11 DK). Some scholars have pointed to a confluence of political

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<sup>25</sup> See Kahn (1960), 166-196.

<sup>26</sup> Naddaf (2005), 82-88. Accepting that Anaximander took a leading role in founding the Milesian colony Apollonia (fr. A3 DK), is it likely that he would consider the origin and development of every thing in the world but human custom and law?

and physical terminology in the doxographical authors recording this point: there is some evidence this may indicate an original confluence in Anaximander's thought.<sup>27</sup> Taking all of this into account, it seems justified to conclude that Anaximander's *Περὶ φύσεως* is our first written exemplar in the tradition that ultimately produces the atomists' *Διάκοσμοι* (Introduction i.4). As noted already, this original treatise appears to have included (1) a cosmogony, (2) a zoogony, and (3) an anthropogony. To this we add now the possibility that it included (4) some reflections on how these origin stories are relevant to human beings acting in the context of a sixth-century Greek πόλις.

### **Xenophanes (1.3.2)**

Xenophanes of Colophon (c. 575-c. 475) provides an early witness to the diversity of the Critical Tradition. Like Anaximander, he appears in the historical record as a published author (fr. A1, A18-27 DK); unlike Anaximander, he composed and performed his own poetry, standing in the tradition of itinerant bards and rhapsodes that is one of the earliest cultural legacies of ancient Greece (fr. A1, A27, B8, B45 DK).<sup>28</sup> Given the

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27 See Vernant (1985, 212-213) and Naddaf (2005, 84-85). Aristotle (fr. A26 DK) notes that the earth abides in the middle (ἐπὶ τοῦ μέσου) because it maintains a relationship to outer things defined by similitude (διὰ τὴν ὁμοιότητα), and Hippolytus (fr. A11 DK) says that being suspended in mid-air (μετέωρον), the earth is ruled by nothing (ὑπὸ μηδενὸς κρατουμένην). Per Naddaf, “the terms ‘centrality,’ ‘similarity,’ and ‘absence of domination’ in Anaximander’s cosmology are clearly linked together as they were in political thought such that, in both cases, what we have is a type of *isonomia*, in the sense that no individual element or portion of the universe would be allowed to dominate another. It is therefore legitimate to say that, just as in the old oriental cosmologies, Anaximander’s cosmology exhibits a solidarity between physical and political space” (84). Vernant and Naddaf both recall the city-planning of Meton (Aristoph. *Aves* 1002-9), who squares the circle to locate the ἀγορά in the very center of his new πόλις, from which roads are said to diverge like rays from a star, a feat for which Pisthetairos calls him Thales. This points to practical, political applications of the Milesians’ physical research, particularly if we give any credence to the tradition that makes Anaximander an οἰκίστης (see note 26 above).

28 Leshner (1992), 69-71.

poetic conventions governing this context, it comes as little surprise that his work attacks competing accounts of the world (including those of his most successful rivals, Homer and Hesiod: frs. A1, A22, B11-12) and preserves a good deal of reflection on proper human conduct (i.e. ethics), one of the primary concerns of the ancient poet (e.g. Hesiod, Solon, Theognis, Phocylides). Nonetheless, there are interesting parallels that can be drawn between what remains of Xenophanes' compositions and what we have already seen in the work of his older contemporary Anaximander. While there is scant evidence that Xenophanes produced a single work *περὶ φύσεως* (on the contrary, the fragments we have appear to come from multiple elegies),<sup>29</sup> his extant work does reveal significant engagement with the core issues addressed by Anaximander.

(1) *Cosmology*. Xenophanes' understanding of the universe is preserved in fr.

B27-33 DK, from which Lesher (1992) draws the following summary:

The whole natural cosmos should be understood as a product of the operations of earth and water (fragments 29, 33), with all natural processes starting from and ending in the earth (fragment 27), especially in the sea (the source of all forms of moisture [fragment 30], including the clouds, which constitute the sun [fragment 31], the rainbow [fragment 32], and other celestial bodies) (5).

This is the most accurate overview that the evidence allows. Turning to particulars, fr.

B27-28 offer food for thought:

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29 Lesher (1992), 7. Antiquity credits him with at least one work bearing the title (see e.g. Schol. in *Il.* 21.196 = fr. 30 DK), but there is not enough evidence to determine whether this (relatively late) assignation is authentic or a retrojection. Likewise, it remains uncertain whether the poet composed his work orally (in the style of the earliest Greek poets) or in writing (see Diog. 9.18), though a balanced assessment of the testimonia inclines toward the former. See especially DK21A24: *Ξενοφάνους πρώτου λόγος ἦλθεν εἰς τοὺς Ἕλληνας ἄξιος γραφῆς* (Arius Did. ap. Stob. 2.1.18).

TEXT ( <i>Lesher</i> )	TRANSLATION ( <i>Lesher</i> )
ἐκ γαίης γὰρ πάντα καὶ εἰς γῆν πάντα τελευτᾷ.	... for all things are from the earth and to the earth all things come in the end.  Xenophanes, fr. B27 DK  Theodoret. <i>Affect.</i> 4.5
γαίης μὲν τόδε πεῖρας ἄνω παρὰ ποσσὶν ὁράται / ἥερι προσπλάζον, τὸ κάτω δ' ἐς ἄπειρον ἰκνεῖται.	This upper limit of the earth is seen here at our feet, / pushing up against the air, but that below goes on without limit.  Xenophanes, fr. B28 DK  Achilles Tatius 4.34.11

Here we have the hint of a theory of cyclical development similar to Anaximander's (in which τὸ ἄπειρον spawns κόσμοι that disintegrate into it over time). In Xenophanes' scheme, all things come from earth (γαῖα, γῆ) which extends into (or constitutes in itself) some kind of material infinity (ἐς ἄπειρον). This hint is fleshed out in the doxography, where Xenophanes is supposed to have explained the contemporary Greek world-order (κόσμος) as resulting from an endlessly iterating cycle of generation and destruction whose imprint appears evident in fossils from Syracuse, Paros, and Malta:

TEXT ( <i>Lesher</i> )	TRANSLATION ( <i>Lesher</i> )
ὁ δὲ Ξενοφάνης μίξιν τῆς γῆς πρὸς τὴν θάλασσαν γίνεσθαι δοκεῖ καὶ τῷ χρόνῳ ὑπὸ τοῦ ὕγρου λύεσθαι, φάσκων τοιαύτας ἔχειν ἀποδείξεις, ὅτι ἐν μέσῃ γῇ καὶ ὄρεσιν εὐρίσκονται κόγχαι, καὶ ἐν Συρακούσαις δὲ ἐν ταῖς λατομίαις λέγει εὐρῆσθαι τύπον ἰχθύος καὶ φωκῶν, ἐν δὲ Πάρῳ τύπον δάφνης ἐν τῷ βάθει τοῦ λίθου, ἐν δὲ Μελίτῃ πλάκας συμπάντων τῶν θαλασσίων. ταῦτα δέ φησι γενέσθαι,	Further, Xenophanes thinks that a mixture of the land with the sea comes about, but that in time (the land) becomes freed from the moisture, and he asserts that there are proofs for these ideas: that shells are found inland and in mountains, and he says that in quarries in Syracuse imprints of fish and seals were found; and in Paros the imprint of coral in the deep of the marble and on Malta slabs of rock containing all sorts of

<p>ὅτε πάντα ἐπηλώθησαν πάλαι, τὸν δὲ τύπον ἐν τῷ πηλῷ ξηρανθῆναι. ἀναιρεῖσθαι δὲ τοὺς ἀνθρώπους πάντας, ὅταν ἡ γῆ κατενεχθεῖσιν εἰς τὴν θάλασσαν πηλὸς γένηται, εἴτα πάλιν ἄρχεσθαι τῆς γενέσεως, καὶ ταύτην πᾶσι τοῖς κόσμοις γίνεσθαι μεταβολήν.</p>	<p>sea creatures. He says that these things came about when long ago everything was covered with mud, and then the imprint dried in the clay. And he says that all men will perish when the land sinks into the sea and becomes mud, at which time generation begins again, and this change comes about in all worlds [properly 'world-arrangements' (Leshner)].</p> <p>Xenophanes, fr. A33 DK</p> <p>Hippol. <i>Refut.</i> 1.14.5-6</p>
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The latter part of this account describes the cosmic generation-destruction cycle already discovered in Anaximander, with a wet-dry opposition plays the role of the hot-cold dichotomy that drives Anaximander's cycle in the doxographical account given by pseudo-Plutarch (fr. A10 DK). The cycle begins with a drying of the land (leaving fossils in the landscape as the seas recede) and culminates in a flood, after which it begins again (εἴτα πάλιν ἄρχεσθαι τῆς γενέσεως). Thus, once more, we have a cosmic scenario in which change is non-arbitrary, reducible to rule (a regular oscillation between wet and dry). But judging from extant writings, Xenophanes offered more than Anaximander here: instead of the vague τὸ ἄπειρον (about which it must have been hard even for Anaximander to say anything too definitive, since any attempt to define it narrowly would artificially limit it), he offered an almighty deity.

The historical record preserves only four direct quotes in which Xenophanes discusses his god:



TEXT ( <i>Leshner</i> )	TRANSLATION ( <i>Leshner</i> )
εἷς θεὸς ἔν τε θεοῖσι καὶ ἀνθρώποισι μέγιστος, / οὔτι δέμας θνητοῖσιν ὁμοῖος οὔτε νόημα.	One god is greatest among gods and men, / not at all like mortals in body or in thought.  Xenophanes, fr. 23 DK  Clem. <i>Strom.</i> 5.109
οὔλος ὁραῖ, οὔλος δὲ νοεῖ, οὔλος δέ τ' ἀκούει.	... whole he sees, whole he thinks, and whole he hears.  Xenophanes, fr. 24 DK  Sext. <i>Adv. math.</i> 9.144
ἀλλ' ἀπάνευθε πόνοιο νόου φρενὶ πάντα κραδαίνει.	... but completely without toil he shakes all things by the thought of his mind.  Xenophanes, fr. 25 DK  Simpl. <i>in Phys.</i> 23.19
αἰεὶ δ' ἐν ταύτῳ μίμνει κινούμενος οὔδέν, / οὔδὲ μετέρχεσθαι μιν ἐπιπρέπει ἄλλοτε ἄλλῃ.	... always he abides in the same place, not moving at all, nor is it seemly for him to travel to different places at different times.  Xenophanes, fr. 26 DK  Simpl. <i>in Phys.</i> 23.10

Xenophanes' god bears notable resemblance to the more ancient Zeus, whom he replaces as superlative mover and shaker.<sup>30</sup> His explicitly inhuman (fr. B23) attributes are senses that pervade his whole body (fr. B24), as opposed to the localized senses of mortals, and a telekinetic mind (fr. B25 DK). He is motionless, anticipating (or perhaps expressing in some incipient form) ideas of perfection as being outside development or change. Most

30 For the likeness between Zeus and the Xenophanean μέγιστος θεός (especially as presented in fr. 23, 25 DK), see *Il.* 1.530 (Zeus shakes Olympus with a nod); Aesch. *Suppl.* 96-103 (Zeus destroys mortals without exerting force); KRS, fr. 170-172; Leshner (1992), 110.

obvious here is the pointed break with ancient Greek traditions that portrayed the gods as exaggerated men and women. Elsewhere, Xenophanes explicitly rejects these traditions, noting that such gods are artificial creations whose appearance changes depending on the artist imagining it (fr. B14-B16 DK). Leaving a more thorough study of Xenophanean deity for later, we can summarize his view of cosmology thus: (a) the Greek universe exists in a cycle of perpetual oscillation between dry and wet that depends on the boundless earth; (b) the cycle is moved somehow (or at least movable) by the thought of an immovable god at once like and unlike traditional Greek deities.<sup>31</sup>

(2) & (3) *Zoogony and Anthropogony*. Three fragments present all that remains of Xenophanes' original thought on the genesis of plants, animals, and human beings. One is fr. B27 DK (quoted above on page 36), which makes the earth the source of all things and their ultimate destination. The others are a little more explicit:

TEXT ( <i>Leshner</i> )	TRANSLATION ( <i>Leshner</i> )
γῆ καὶ ὕδωρ πάντ' ἐσθ' ὅσα γίνοντ' ἡδὲ φύονται.	All things which come into being and grow are earth and water.  Xenophanes, fr. 29 DK  Philopon. <i>in Phys.</i> 1.5.125
πάντες γὰρ γαίης τε καὶ ὕδατος ἐκγενόμεσθα.	For we all come into being from earth and water.  Xenophanes, fr. 33 DK  Sext. <i>Adv. math.</i> 10.314

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31 Leshner (1992), 106-110; Naddaf (2005), 117.

These fragments confirm that for Xenophanes, biological life is part of the physical cycle of wet and dry that creates κόσμοι like the Greek universe. While the precise origin and evolution imagined for life in this cycle remain unclear, the doxography has Xenophanes identifying the sun as a proximate cause for generation (perhaps because it dries the land and allows primeval forms of animal and human life to emerge from the water).<sup>32</sup> For our purposes here, it is enough to notice that the origin and evolution of life were on Xenophanes' mind when he created the poetry that we read about the world-order in which he lived.

(4) *Ethics*. The majority of Xenophanean fragments extant comprise reflections on proper human behavior, which Lesher (1992) summarizes thus:

The measures of personal excellence are piety in thought and deed (fragment 1), service to the city (fragment 2), and a life of moderation, avoiding the pursuit of unlimited wealth and useless luxuries (fragments 3, 4, 5, 22) (5).

Most interesting are the ethical fragments that discuss human thought, criticizing popular ideas of deity and the universe. As noted by Lesher (1992, 117-118), Xenophanes effectively turns his back on many parts of traditional Greek religion, rejecting (a) divine epiphanies (since deity does not move or appear in human form: fr. B26, B14 DK); (b) omens (since these occur naturally without intervention, and divine revelation does not guide human invention: fr. B32, A39, B18 DK); (c) poetic and popular mythologies

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32 See Aet. 2.30.8 (= fr. A42 DK); Naddaf (2005), 118. Note too that Xenophanes appears to have understood the sun to be a plural entity (Aet. 2.24.4, 9 = fr. A41-41a DK), not without plausible reasons: see Lesher (1992), 146.

(since poets imagine the gods as wicked and pass that idea on to all the people: fr. B10-B12 DK); (d) anthropomorphism (since deity is not like humanity: fr. B15-16, B23 DK); (e) charismatic authority (the wisdom of contemporary teachers such as Pythagoras and Epimenides is rejected: fr. B7, A1 DK); (f) divine possession (fr. B26 DK); and (g) seers and oracles (since there is no recognizable knowledge of futurity available to humans: fr. A52, B34.3-4 DK). Instead of these traditional paths to a traditional divine wisdom (which he conceives as too positive in its assertion of human knowledge), Xenophanes offers a novel path to his novel god, who remains an all but inaccessible mystery.

In Xenophanes' world, human knowledge is fundamentally unclear and imperfect.

This means that men can never know anything with absolute certainty:<sup>33</sup>

TEXT ( <i>Leshner</i> )	TRANSLATION ( <i>Leshner</i> )
καὶ τὸ μὲν οὖν σαφὲς οὐτις ἀνὴρ ἴδεν οὐδέ τις ἔσται / εἰδὼς ἀμφὶ θεῶν τε καὶ ἄσσα λέγω περὶ πάντων· / εἰ γὰρ καὶ τὰ μάλιστα τύχοι τετελεσμένον εἰπών, / αὐτὸς ὅμως οὐκ οἶδε· δόκος δ' ἐπὶ πᾶσι τέτυκται.	... and of course the clear and certain truth no man has seen / nor will there ever be anyone who knows about the gods and what I say about all things. / For even if, in the best case, one happened to speak just of what has been brought to pass, / still he himself would not know. But opinion is allotted to all.
	Xenophanes, fr. 34 DK
	Sext. <i>Adv. math.</i> 7.49.110

Still, with this proviso, people can improve their situation in the universe:

<sup>33</sup> Or in other words, all human knowledge is necessarily subject to revision, since we are unable to experience directly the fundamental realities upon which our knowable reality rests. All we can know is contextual, contingent truth: the absolute truth that produces this (i.e. Xenophanes' deity?) lies beyond our ken, outside any context in which we could approach it with clarity. This is my harmonization of the six different interpretations of fr. B34 DK recognized by Leshner (1992), 161-166.

TEXT ( <i>Leshner</i> )	TRANSLATION ( <i>Leshner</i> )
οὔτοι ἀπ' ἀρχῆς πάντα θεοὶ θνητοῖς ὑπέδειξαν, / ἀλλὰ χρόνῳ ζητοῦντες ἐφευρίσκουσιν ἄμεινον.	Indeed not from the beginning did gods intimate all things to mortals, but as they search in time they discover better.
	Xenophanes, fr. 18 DK
	Stob. 1.8.2

The context in which Xenophanes imagines human improvement here is unclear: other fragments (e.g. fr. B1-B3 DK) suggest a pessimistic assessment, in which individuals learn better while the society as a whole remains imprisoned by illusions, pursuing false knowledge and useless luxury, valuing sport over wisdom such as Xenophanes offers (ἡμετέρη σοφίη: fr. B2 DK).<sup>34</sup> Judging from the extant fragments, the practitioner of this wisdom steered a careful course between uncivil rudeness (ὑβρις: fr. B1.17 DK) and the unprofitable excesses of civilization (ἀβροσύνας ... ἀνωφελέας: fr. B3.1 DK), drinking wine without getting drunk (fr. B1.17-18 DK)<sup>35</sup> and singing at symposia without repeating (or giving credence to) “fictions of old” (πλάσματα τῶν προτέρων: fr. B1.22 DK, trans. Leshner).<sup>36</sup> Having rejected the illusion of absolute, perfect knowledge (as something available to humans), he was free to shape his imperfect opinions to match whatever discoveries he might make. While this made him a skeptic where traditional ideas of divinity were concerned, it did not make him an atheist or a social outcast: his god was different (an inhuman mystery) rather than non-existent, and he followed accepted patterns of pious behavior conducive to εὐνομία (fr. B2.19 DK).

<sup>34</sup> This is the verdict of Leshner (1992), 149-155 (with ample bibliography).

<sup>35</sup> Unlike the uncivilized Polyphemus (*Od.* 9.362) or centaurs (Xenophanes, fr. B1.22 DK).

<sup>36</sup> Unlike the civilized men of the time (e.g. poets, rhapsodes, and their audiences): see fr. B1.21-24 DK.

The suggestive temporal phrasing of fr. B18 DK (ἀπ' ἀρχῆς .. ἀλλὰ χρόνῳ) has led some to speculate that Xenophanes may have constructed some kind of theory of human cultural development (an illustration of how men began the process of discovering better after emerging from primeval mud).<sup>37</sup> While the doxography is suggestive (as with Anaximander), noting that Xenophanes composed poems recording the foundation of Colophon and Elea (Diog. 9.20 = fr. A1 DK), it is not decisive: we do not know what he said about the origins of human institutions. The most we can say is that Xenophanes represents a writer in the same broad tradition as Anaximander: like the Milesian, the Colophonian approaches the Greek universe from a viewpoint that unites cosmology, zoology, anthropology, and human ethics—though the precise relationship(s) between all of these things in Xenophanes' mind remains unclear, owing in some part to the fragmentary state of our evidence.

### **Heraclitus (1.3.3)**

Diogenes Laertius (9.5-6 = fr. A1 DK) makes Heraclitus of Ephesus (c. 540-c. 480) the author of a book *Περὶ φύσεως* which contained three λόγοι, one about everything (περὶ τοῦ παντός), one about the πόλις (πολιτικόν), and one about the gods (θεολογικόν). Other doxographical sources are less specific, mentioning that Heraclitus wrote without saying much about the nature of his work, except that it was not easy to understand.<sup>38</sup> The Suda (s.v. Ἡρακλεῖτος = fr. A1a DK) makes him the author of many things “in a poetic style” (καὶ ἔγραψε πολλὰ ποιητικῶς). The result is modern

<sup>37</sup> Naddaf (2005), 118-119. This is supported by DK21B4, which has Xenophanes attributing the invention of coinage to the Lydians (confirming that he composed *Kulturgeschichte*: see chapter 3.2).

<sup>38</sup> See fr. A4 DK = Aristot. *Rhet.* 3.5.1407b11; Demetr. 192; Diog. 2.22.

uncertainty regarding the original textual provenance of the fragments that have come down to us,<sup>39</sup> the vast majority of them riddling aphorisms that amply justify the ancient consensus that Heraclitus was obscure. Nevertheless, there is enough material extant and interpretable to show that Heraclitus was concerned with the same issues that occupied Anaximander and Xenophanes, and that his work tried to capture the Greek universe in a single, unified theory (as theirs apparently did).

(1) *Cosmogony*, (2) *Zoogony*, & (3) *Anthropogony*. Given the nature of the evidence, it is impossible to determine the particulars of Heraclitus' vision of the Greek universe, but several familiar things stand out. First, there is the idea of a physical cycle governing the world-order:

TEXT ( <i>Marcovich</i> )	TRANSLATION ( <i>Marcovich</i> )
κόσμον τόνδε, τὸν αὐτὸν ἀπάντων, οὔτε τις θεῶν οὔτε ἀνθρώπων ἐποίησεν, ἀλλ' ἦν ἀεὶ καὶ ἔστιν καὶ ἔσται πῦρ ἀείζων, ἀπτόμενον μέτρα καὶ ἀποσβεννύμενον μέτρα.	This world-order, the same for all (men), no one of gods or men has made, but it always was and always will be: an ever-living fire, kindling in measures and going out in measures.  Heraclitus, fr. 51 Marcovich = fr. B30 DK  Clem. <i>Strom.</i> 5.103.6 (with various partial quotations elsewhere)

The exact nature of the fiery cycle described here is disputed: some assert that it is an active cycle in which orders are born and extinguished periodically;<sup>40</sup> others maintain that it is a passive cycle in which eternal equilibrium describes a single, unchanging order.<sup>41</sup>

39 Robinson (1987), 3-4.

40 Thus Mondolfo, Kahn, and Robin: for bibliography, see Naddaf (2005), 130.

41 Thus Kirk and Guthrie: for bibliography, see Naddaf (2005), 129.

In the first scenario (which is supported in the doxography),<sup>42</sup> it is possible to talk about the origin and temporal development of a world (κόσμος); in the latter, this is somewhat problematic. Either way, however, the reduction of cosmic phenomena to a cycle governed by measure (μέτρα) is familiar to us.

Heraclitus' reflection on biological life (including humans and animals) survives only in dark hints like the following:

TEXT (Marcovich)	TRANSLATION (Marcovich)
(a) πυρὸς τροπαί· πρῶτον θάλασσα, θαλάσσης δὲ τὸ μὲν ἥμισυ γῆ, τὸ δὲ ἥμισυ πρηστήρ ... (b) <γῆ> θάλασσα διαχέεται, καὶ μετρέεται εἰς τὸν αὐτὸν λόγον ὁκοῖος πρόσθεν ἢν ἢ γενέσθαι γῆ.	(a) The transformations (turnings) of fire: first sea, and of the sea the half is earth, the half prester (burning) ... (b) <Earth> is liquified as sea, and it is measured in the same proportion as existed before it became earth.  Heraclitus, fr. 53a-b Marcovich = fr. 31 DK  Clem. <i>Strom.</i> 5.104.3
ψυχῆισιν θάνατος ὕδωρ γενέσθαι, ὕδατι δὲ θάνατος γῆν γενέσθαι· ἐκ γῆς δὲ ὕδωρ γίνεται, ἐξ ὕδατος δὲ ψυχή.	For souls it is death to become water, for water it is death to become earth; but out of earth water comes to be, and out of water, soul.  Heraclitus, fr. 66 Marcovich = fr. B36 DK  Clem. <i>Strom.</i> 6.17.1-2

The idea that life comes from water (ἐξ ὕδατος δὲ ψυχή: fr. 66 Marcovich) is familiar to us already (see page 40). If we take the accompanying assertion that water and earth are

<sup>42</sup> Diog. 9.8 (= fr. A1.8 DK); Simpl. *in Phys.* 23.33 (= fr. A5 DK); Aet. 1.3.11 (= fr. A5 DK). The modern interpreters are divided on whether the Stoics were correct (as these sources assert) in ascribing to Heraclitus a doctrine of ἐκπύρωσις.



mutually procreative (fr. 66 Marcovich) and assume it to cohere with the idea that the world-order consists ultimately of metamorphosing fire (fr. 53 Marcovich), it is possible to draw a map of life's origin and development which has it as the expression of various temporal forms of an underlying eternal fire (which constitutes either one endless world or an eternal succession of worlds).<sup>43</sup>

Like Xenophanes, Heraclitus criticizes ideas of divinity current in contemporary Greek religion (e.g. fr. 47, 50, 86 Marcovich). Unlike Xenophanes, he does not reject traditional images of deity entirely or attempt to replace them with something radically new and different:

TEXT ( <i>Marcovich</i> )	TRANSLATION ( <i>Marcovich</i> )
ἐν τὸ σοφόν· ἐπίστασθαι γνώμην † ὅτι ἐκ κυβερνήσαι † πάντα διὰ πάντων	Wisdom is one thing: to know the Thought (Intelligence) by which all things are steered through all (ways).  Heraclitus, fr. 85 Marcovich = fr. 41 DK  Diog. 9.1
ἐν τὸ σοφόν μούνον, λέγεσθαι οὐκ ἐθέλει καὶ ἐθέλει Ζηνὸς ὄνομα.	One (being), the only (truly) wise, is both unwilling and willing to be called by the name of Zeus.  Heraclitus, fr. 84 Marcovich = fr. 32 DK  Clem. <i>Strom.</i> 5.115.1

Like Xenophanes (fr. 25 DK), Heraclitus talks about thought controlling all things (fr. 85 Marcovich). Unlike Xenophanes, he does not avoid naming the incorporate author of this

<sup>43</sup> KRS, fr. 217-220; Marcovich (1967), 284-286; Robinson (1987), 184-185; Naddaf (2005), 132.

thought (fr. 84 Marcovich). Rather than reject the nomenclature of tradition, he reclaims it as indicative of a reality that his fellow-citizens have failed to grasp fully (as they have failed to assimilate the divine law or the universal λόγος in fr. 23 and 1 Marcovich). Elsewhere, Heraclitus refers to fire as a ruling principle in the world,<sup>44</sup> perhaps indicating that he regarded the traditional god Zeus as an acceptable allegory for fire.<sup>45</sup>

(4) *Ethics*. Heraclitus left many fragments with ethical resonance, allowing us to create a fairly detailed picture of human life as he imagined it. The first thing to notice is his insistence that life rests on universal principles that people can perceive and express:

TEXT ( <i>Marcovich</i> )	TRANSLATION ( <i>translator</i> )
<p>ξὺν νόῳ λέγοντας ἰσχυρίζεσθαι χρή τῷ ξυνῶι πάντων, ὅκωσπερ νόμῳ πόλις καὶ πολὺ ἰσχυροτέρως· τρέφονται γὰρ πάντες οἱ ἀνθρώπειοι νόμοι ὑπὸ ἐνός, τοῦ θείου· κρατεῖ γὰρ τοσοῦτον ὁκόσον ἐθέλει καὶ ἐξαρκεῖ πᾶσι καὶ περγίνεται. διὸ δεῖ ἔπεσθαι τῷ &lt;ξυνῶι&gt; τοῦ λόγου δ' ἐόντος ξυνοῦ ζώουσιν οἱ πολλοὶ ὡς ἰδίαν ἔχοντες φρόνησιν.</p>	<p>Those who will speak [i.e. act] with sense must rely on what is common to all as a city relies on its law, and much more firmly: for all human laws are nourished by one law, the divine law; for it extends its power as far as it will and is sufficient for all [human laws] and still is left over. Therefore one ought to follow what is common. But although the Logos is common the many live as if they had a religious [sic] wisdom of their own. (<i>Marcovich</i>)</p> <p>Heraclitus, fr. 23a Marcovich = fr. B114, B2 DK</p> <p>Stob. 3.1.179; Sext. <i>Adv. math.</i> 7.133</p>

<sup>44</sup> See fr. 79, 80, 82 Marcovich.

<sup>45</sup> Marcovich (1967), 446.

<p>τοῦ δὲ λόγου τοῦδ' ἐόντος αἰεὶ ἀξύνετοι γίνονται ἄνθρωποι καὶ πρόσθεν ἢ ἀκοῦσαι καὶ ἀκούσαντες τὸ πρῶτον· γινομένων γὰρ πάντων κατὰ τὸν λόγον τόνδε ἀπείροισιν εἰκόασι πειρώμενοι καὶ ἐπέων καὶ ἔργων τοιούτων ὁκοίων ἐγὼ διηγεῦμαι κατὰ φύσιν διαιρέων ἕκαστον καὶ φράζων ὅπως ἔχει· τοὺς δὲ ἄλλους ἀνθρώπους λανθάνει ὁκόσα ἐγερθέντες ποιοῦσιν ὅκωσπερ ὁκόσα εὖδοντες ἐπιλανθάνονται.</p>	<p>But of this account, which holds forever, people forever prove uncomprehending, both before they have heard it and when once they have heard it. For, although all things happen in accordance with this account, they are like people without experience when they experience words and deeds such as I set forth, distinguishing as I do each thing according to its real constitution, i.e., pointing out how it is. The rest of mankind, however, fail to be aware of what they do after they wake up just as they forget what they do while asleep. (Robinson)</p> <p>Heraclitus, fr. 1 Marcovich = fr. B1 DK</p> <p>Sext. <i>Adv. math.</i> 7.132</p>
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Fr. 23a Marcovich asserts a divine law (νόμος) or word (λόγος) that is common to all (τῶι ξυνῶι πάντων): sensible people rely on this law, but the many live without it as though possessing their own thought (ιδίαν ἔχοντες φρόνησιν). Fr. 1 Marcovich makes this word (λόγος) communicable (ὁκοίων ἐγὼ διηγεῦμαι) and construes it as discerning and expressing the nature of every individual thing (κατὰ φύσιν διαιρέων ἕκαστον καὶ φράζων ὅπως ἔχει), but, once again, people fail to notice it. Certainly this law or word is a matter of ethics for Heraclitus (δεῖ ἔπεσθαι τῶι <ξυνῶι>: fr. 23a Marcovich). It also appears to be a matter of physics (κατὰ φύσιν: fr. 1 Marcovich), an inference confirmed when we learn elsewhere that dry souls (those most fiery) are wisest and best (αὔη ψυχὴ σοφωτάτη καὶ ἀρίστη: fr. 68 Marcovich), by which Heraclitus seems to mean that they

perceive material (physical) reality (i.e. the eternal cosmic fire) most accurately.<sup>46</sup>

There is a certain degree of elitist pessimism evident in fr. 1, 23a Marcovich, with a sizable number of people consistently failing to recognize the λόγος. But it would be wrong to conclude that Heraclitus sees the πολλοί (or those with wet souls) as fundamentally incapable of apprehension. Several fragments indicate that all people (possibly even all things)<sup>47</sup> have access to sound thought (τὸ φρονεῖν, σωφρονεῖν, λόγος), implying that they can all eventually ground their behavior on accurate perceptions of the reality of the divine νόμος that underlies Heraclitus' λόγος.<sup>48</sup> Likewise, there are clear indications that no concrete instance of a physical phenomenon (such as a wet soul) endures unchanged:

TEXT ( <i>Marcovich</i> )	TRANSLATION ( <i>Robinson</i> )
τὰ ψυχρὰ θέρεται, θερμὸν ψύχεται, ὑ<γρὸν> αὐαίνεται, καρφαλέον νοτί- ζετ<αι>.	Cold things become warm, a warm thing becomes cold; a moist thing becomes dry, a parched thing becomes moist.  Heraclitus, fr. 42 Marcovich = fr. B126 DK  Tzetz. <i>Ex.</i> p. 126 Hermann

From this, it seems safe to conclude that Heraclitus admitted the possibility of human

46 See fr. 69 Marcovich (with commentary), which explains the drunk's inability to perceive his path as a result of his soul being wet: ἀνὴρ ὁκόταν μεθυσθῇ, ἄγεται ὑπὸ παιδὸς ἀνήβου σφαλλόμενος, οὐκ ἐπαΐων ὅκη βαίνει, ὑγρὴν τὴν ψυχὴν ἔχων (Stob. 3.5.7). Note that here, as throughout Ionian philosophy, the soul (ψυχή) is a material entity whose function in the world depends on physical factors (e.g. the proportion of fire to water in its composition).

47 Reading fr. 23d (1) Marcovich as Heraclitus' adaptation of the saying πάντα πλήρη θεῶν attributed to Thales by Aristotle, *De anima* 1.5.411a7 (= DK11A22). See Robinson (1987), 155.

48 See fr. 23d(1) (ξυνόν ἐστι πᾶσι τὸ φρονεῖν: Stob. 3.1.179) and 23e Marcovich: ἀνθρώποισι πᾶσι μέτεστι γινώσκειν ἑαυτοὺς καὶ σωφρονεῖν (Stob. 3.5.6). See also fr. 23f Marcovich: σωφρονεῖν ἀρετὴ μεγίστη, καὶ σοφίη ἀληθέα λέγειν καὶ ποιεῖν κατὰ φύσιν ἐπαΐοντας (Stob. 3.1.178).

progress (e.g. some who miss the common λόγος can eventually perceive it, and wet souls can become drier).<sup>49</sup> Assuming that he did, we know the general mechanism by which he would have imagined it occurring:

TEXT ( <i>Marcovich</i> )	TRANSLATION ( <i>Marcovich</i> )
εἰδέ<ναι> χρή τὸν πόλεμον ἔοντα ξυνὸν καὶ δίκην ἔριν καὶ γινόμενα πάντα κατ' ἔριν καὶ χρεών·	One must know that war is common and strife is justice and that all things come to pass by strife and necessity.  Heraclitus, fr. 28 Marcovich = fr. B80 DK  Celsus ap. Origen, <i>Contra Cels.</i> 6.42
πόλεμος πάντων μὲν πατήρ ἐστι, πάντων δὲ βασιλεύς, καὶ τοὺς μὲν θεοὺς ἔδειξε τοὺς δὲ ἀνθρώπους, τοὺς μὲν δούλους ἐποίησε τοὺς δὲ ἐλευθέρους.	War is father of all (beings) and king of all, and so he renders some gods, others men, he makes some slaves, and others free.  Heraclitus, fr. 29 Marcovich = fr. 53 DK  Hippol. <i>Refut.</i> 9.9.4

In the Greek universe as imagined by Heraclitus, everything is decided by conflict, which is universal (ξυνὸν), just like the divine νόμος or λόγος (fr. 23a Marcovich). It settles everything (γινόμενα πάντα κατ' ἔριν), including ethical problems (δίκην ἔριν: fr. 28 Marcovich).<sup>50</sup> In identifying this universal πόλεμος as πατήρ (fr. 29 Marcovich), Heraclitus implies that a genealogy of it could be given. Thus, even if explicit details are lacking, we have all the basic ingredients necessary for an account of the origin and development of human institutions (politogony). If Heraclitus were to offer such an

<sup>49</sup> This is supported by the doctrine of opposites attested in the fragments (e.g. fr. 32-50 Marcovich, including fragment 42 quoted on this page), according to which a thing entails its opposite. For further arguments in favor of an Heraclitean theory of human progress, see Naddaf (2005), 133.

<sup>50</sup> See also fr. 103 Marcovich: μάχεσθαι χρή τὸν δῆμον ὑπὲρ γε τοῦ νόμου ὁκωσπερ τείχεος (Diog. 9.2).

account, it would clearly envisage the ethical world of man as part of the greater universe described by the universal law of his λόγος (which is explicitly all-encompassing).

The last important thing to notice here about Heraclitus' λόγος (as extant) is its approach to divinity. Unlike Xenophanes, who rejects the traditional pantheon as human fiction (DK21B11-12, B14-16, B32) and imagines something at once radically different (DK21B23-26) and ethically admirable (DK21B1, B11), Heraclitus retains the old gods (in name at least, as we have seen in fr. 84 Marcovich) and embraces their suspect ethical character as part and parcel of real life in the Greek universe:

TEXT ( <i>Marcovich</i> )	TRANSLATION ( <i>Robinson</i> )
ὁ θεὸς ἡμέρη εὐφρόνη, χειμῶν θέρος, πόλεμος εἰρήνη, κόρος λιμός ... ἀλλοιοῦται δὲ ὅκωσπερ <πῦρ>, <ὄ>κοταν συμμιγῇ θυώμασιν ὀνομάζεται καθ' ἡδονὴν ἐκάστου.	God is day and night, winter and summer, war and peace, satiety and famine, and undergoes change in [the] way that fire, whenever it is mixed with spices, gets called by the name that accords with the bouquet of each spice. ( <i>adapted</i> )  Heraclitus, fr. 77 Marcovich = fr. B67 DK  Hippol. <i>Refut.</i> 9.10.8
τῷ μὲν θεῷ καλὰ πάντα καὶ δίκαια, ἄνθρωποι δὲ ἃ μὲν ἄδिका ὑπειλήφασιν ἃ δὲ δίκαια.	To god all things are fair and just, whereas humans have supposed that some things are unjust, others just.  Heraclitus, fr. 91 Marcovich = fr. B102 DK  Porphyry. <i>Quaest. Hom. ad Il.</i> 4.4 (p. 69 Schrader)

Instead of cultivating respect for morally upright divinity, Heraclitus invites his readers to consider the limitations imposed by their human morality, limitations that do not exist for gods indifferent to human ideas of right and wrong. Xenophanes' deity projects inhuman goodness (as far as we can tell: at the very least, the poet-philosopher encourages us to think well of gods and to avoid making them responsible for human crimes). Heraclitus' deity, in contrast, projects fundamental moral ambiguity, like the old gods rejected by Xenophanes. Justice for Heraclitus is a practical reality,<sup>51</sup> but as with everything else, its ultimate arbiter is conflict (δίκην ἔριν: fr. 28 Marcovich), where deity (or the ultimate reality that deity represents allegorically) sides with the victors for reasons hidden from man (at least in the aggregate).<sup>52</sup> The result is an ethically ambiguous world: every action brings retribution (in an inevitable coincidence of opposites),<sup>53</sup> and so whatever happens must (at least eventually) be right, no matter how wrong it might seem. In such a world, action (what one does) is not as important as attitude (how and why one does it).<sup>54</sup> This is an important perspective to keep in mind as we move forward.

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51 See fr. 45 Marcovich: Δίκης ὄνομα οὐκ ἂν ἤιδεσαν εἰ ταῦτα μὴ ἦν (Clem. *Strom.* 4.9.7).

52 In addition to fr. 91, see fr. 90 (ἦθος γὰρ ἀνθρώπειον οὐκ ἔχει γνώμας, θεῖον δὲ ἔχει: Celsus ap. Origen, *Contra Cels.* 6.12) and fr. 92 Marcovich: ἀνὴρ νήπιος ἤκουσε πρὸς δαίμονος ὁκωσπερ παῖς πρὸς ἀνδρός (Celsus ap. Origen, *Contra Cels.* 6.12).

53 For the coincidence of opposites, see note 49. For the principle of retribution, see fr. 52 ("Ἥλιος οὐχ ὑπερβήσεται μέτρα ... εἰ δὲ μή, Ἐρινύες μιν Δίκης ἐπίκουροι ἐξευρήσουσιν: Plut. *De exil.* 604a); 19 (Δίκη καταλήψεται ψευδῶν τέκτονας καὶ μάρτυρας: Clem. *Strom.* 5.9.3); and 82 Marcovich: πάντα ... τὸ πῦρ ἐπελθὼν κρινεῖ καὶ καταλήψεται (Hippol. *Refut.* 9.10.6).

54 See fr. 94-98 Marcovich. What makes men great in these fragments is not what happens to them, but their intention (going into action) and reaction (when things happen to them).

### Parmenides (1.3.4)

The next author in the Critical Tradition is Parmenides of Elea (born c. 515).<sup>55</sup> While Theophrastus knows only one written work (σύγγραμμα) of his (Diog. 1.16 = fr. 41 Coxon), the Suda (s.v. Παρμενίδης Πύρητος Ἐλεάτης = fr. 41a Coxon) mentions a poetic physical treatise (ἔγραψε δὲ φυσιολογίαν δι' ἐπῶν) and other writings in prose (ἄλλα τινα καταλογάδην).<sup>56</sup> All extant fragments are poetic hexameters, generally agreed to come from a single composition Περὶ φύσεως.<sup>57</sup> These preserve a theophany much debated by modern scholars, who cannot agree whether its principal subject is material reality (φύσις) or ontology (εἶναι).<sup>58</sup> Without trivializing this dichotomy, there is good reason to suspect that it is probably false (or at least overdrawn): as we have already seen (most clearly in Heraclitus), the Critical Tradition does not separate reality into neat categories like this. It addresses everything (with no explicit break between material reality, ontology, and whatever else contributes to the construction of world-arrangements: note that the backbone of everything so far is consistently some kind of material, whether ἄπειρον, γαῖα ἐς ἄπειρον, or πῦρ). From this perspective, it is not

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55 The Critical Tradition thus includes all the different schools of early Greek philosophical thought, e.g. the philosophers that Diogenes Laertius (1.13-15) refers to as Ionians (including Thales, Anaximander, Anaximenes, Anaxagoras, Archelaus, and Socrates) and Italians (including Pherecydes, Pythagoras, Telauges, Xenophanes, Parmenides, Zeno, Leucippus, and Democritus). For the purposes of this study, the similarities between these thinkers are more important than the differences: thus all appear here as representatives of a single cultural movement in archaic and classical Greece, a movement which was never monolithic or univocal. While our philosophers shared many important things in common, each one also went his own way, and had more things in common with some of his fellows than with others.

56 The Suda's source for this is Plato (perhaps *Soph.* 237a). Xenocrates is supposed to have written a volume περὶ τῶν Παρμενίδου (Diog. 4.13 = fr. 16a Coxon).

57 See Sext, *Adv. math.* 7.111-114 (= fr. 136 Coxon); Simplicius, *in De caelo* 556.25 (= fr. A14 DK); Mourelatos (2008), 1-4; Coxon (2009), 1-34.

58 For bibliography, see Naddaf (2005), 135.



surprising that ancient readers interpreted Parmenides as another φύσις rather than an untimely anticipation of Heidegger.<sup>59</sup> In what follows, I start from the ancient reading of Parmenides (which treats his poem as a commentary on φύσις) without denying either Parmenides' role as an innovator or the usefulness of unique modern approaches to what remains of his text.

(1) *Cosmogony*. In Parmenides' poem, the goddess who receives him beyond the gate of Night and Day tells him that he must learn everything: χρῆν δέ σε πάντα πυθέσθαι (fr. 1.28 Coxon = Sext. *Adv. math.* 7.111). Elsewhere, the poet is promised knowledge of the physical universe:

TEXT (Coxon)	TRANSLATION (Coxon)
εἴσῃ δ' αἰθερίην τε φύσιν τά τ' ἐν αἰθέρι πάντα / σήματα καὶ καθαρῆς εὐαγέος ἡελίοιο / λαμπάδος ἔργ' αἰδήλα, καὶ ὀππόθεν ἐξεγένοντο, / ἔργα τε κύκλωπος πεύσῃ περίφοιτα σελήνης / καὶ φύσιν, εἰδήσεις δὲ καὶ οὐρανὸν ἀμφὶς ἔχοντα, / ἔνθεν ἔφυ τε καὶ ὥς μιν ἄγουσ' ἐπέδησεν ἀνάγκη / πεῖρατ' ἔχειν ἄστρων.	You will understand the aether's origin, and likewise all the signs in the aether and the invisible deeds of the pure torch of the brilliant sun, and whence they sprang; and you will learn of the migratory deeds of the round-faced moon and of its origin; you will understand also the heaven which surrounds them, whence it originated and how necessity led and chained it to control the stars.  Parmenides, fr. 9 Coxon  Clem. <i>Strom.</i> 5.138

<sup>59</sup> See Aristot. *Phys.* 1.184b15-25, 1.186a11-25, *Metaph.* 1.986b24; Plato, *Theaet.* 152d-e, *Soph.* 242c-e; and Sext. *Adv. math.* 7.5, 7, 111-114 (= fr. 135-136 Coxon) summarized by Naddaf (2005): “The ancient tradition clearly saw Parmenides as a *phusikos*. Plato associated Parmenides' doctrine of being and unity with the physical universe, and this is corroborated by Aristotle. Moreover, Sextus Empiricus, from whom we derive a good part of Parmenides' poem, states that he copied the reference from Parmenides' poem *Peri phuseôs*. In the final analysis, Parmenides' poem must be understood in the context of Ionian *historia* of the *peri phuseôs* type” (135). See also Kingsley (2003), 564.

<p>πῶς γαῖα καὶ ἥλιος ἡδὲ σελήνη / αἰθήρ τε  ξυνὸς γάλα τ' οὐράνιον καὶ Ὀλύμπος /  ἔσχατος ἡδ' ἄστρον θερμὸν μένος  ὠρμήθησαν / γίγνεσθαι.</p>	<p>... how earth and sun and moon and  universal aether and celestial galaxy and  extreme olympus and the stars' hot power  started to come into being.</p> <p>Parmenides, fr. 10 Coxon</p> <p>Simpl. <i>de Caelo</i> 559</p>
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Here we find familiar hallmarks of a Critical cosmology, which (a) imagines physical phenomena in terms of regular repeating cycles (like the ἔργα περίφοιτα of the moon and the rotation of the stars chained by necessity in fr. 9 Coxon); and (b) attempts to explain the origin and development of these phenomena (ὁππόθεν ἐξεγένοντο, ἔνθεν ἔφυ, πῶς ... ὠρμήθησαν γίγνεσθαι). Judging from what remains of Parmenides' poem, light (φάος) and night (νύξ) appear to have been dual causes of generation in his story of the Greek universe, functionally equivalent to Anaximander's ἄπειρον, Xenophanes' γαῖα, or Heraclitus' πῦρ:

TEXT (Coxon)	TRANSLATION (Coxon)
<p>πᾶν πλεον ἔστιν ὁμοῦ φάεος καὶ νυκτὸς  ἀφάντου / ἴσων ἀμφοτέρων, ἐπεὶ οὐδε-  τέρωι μετὰ μηδέν.</p>	<p>All is full of light and invisible night  together, both of them equal, since in  neither is there Nothing.</p> <p>Parmenides, fr. 11.3-4 Coxon</p> <p>Simpl. <i>in Phys.</i> 180</p>

The doxographers concur that Parmenides recognized two cosmogonic principles, which (following Aristotle) they identify as fire (alternately τὸ θερμόν) and earth (alternately τὸ ψυχρόν), feasible interpretations of poetic φάος and νύξ.<sup>60</sup>

<sup>60</sup> See frs. 300-308 KRS; frs. 22, 25, 26, 30, 32, 40, 41, 55, 61, 83, 88, 90, 92, 113, 189, 193, 195, 196,

Like Xenophanes and Heraclitus, Parmenides has a deity in charge of the light-night system that creates the Greek world-order:

TEXT (Coxon)	TRANSLATION (Coxon)
ἐν δὲ μέσῳι τούτων δαίμων, ἥ πάντα κυβερνᾷ / πάντῃ γὰρ στυγεροῖο τόκου καὶ μίξιος ἄρχει	Between these is the divinity who governs all things. For everywhere she initiates hateful birth and union ...  Parmenides, fr. 12.3-4 Coxon  Simpl. in <i>Phys.</i> 39

The relationship between this mysterious goddess and physical forces like the ἀνάγκη that chains the stars (fr. 9.6 Coxon) remains unclear.<sup>61</sup> It is not out of the question that Parmenides might have viewed his goddess as an allegorical representation of the same reality that he refers to elsewhere with words like ἀνάγκη (taking the same approach to deity as that adopted by Heraclitus, who could call the ruling principle of his universe Zeus or fire, depending on context).

(2) *Zoogony* & (3) *Anthropogony*. Parmenides' poetic fragments offer scant information to work with here, but they do preserve some indication that Parmenides was interested in animal and human life, including especially the physical process(es) of development whereby human beings become capable of thought.<sup>62</sup> The doxography is more vocal, crediting Parmenides with explicit ideas about zoogony and anthropogony.

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204, 207, 213, 215 Coxon. Note the following quote from Plutarch, *Adv. Colot.* 1114b: [Παρμενίδης] γε καὶ διάκοσμον πεποίηται, καὶ στοιχεῖα μίγνυς τὸ λαμπρὸν καὶ σκοτεινὸν ἐκ τούτων τὰ φαινόμενα πάντα καὶ διὰ τούτων ἀποτελεῖ (fr. 113 Coxon).

61 Fr. 1.14 Coxon has δίκη controlling access to the gate of Night and Day. This is the only other reference in the poetic fragments to a controlling entity in Parmenides' universe.

62 See frs. 12, 17-20 Coxon. In fr. 12, the ruling goddess brings male and female together (μίξιος ἄρχει / πέμπουσ' ἄρσενι θῆλυ μίγῃν τό τ' ἐναντίον αὐτίς / ἄρσεν θηλυτέρῳ: 12.4-6). In fr. 17, thought is a function of the physical κρήσις of the members.

We are told that he discussed the origin of animals down to the origin of their individual members (μόρια)<sup>63</sup> and that the sun was involved in the origin of humans.<sup>64</sup>

(4) *Ethics*. Parmenides is remembered as a geographer<sup>65</sup> (like Anaximander) and a legislator.<sup>66</sup> As already noted (see note 27 above), these interests (particularly the latter) presuppose an understanding of human behavior which presumably integrated with his physical doctrine in some way (and might possibly have incorporated stories explaining the origin and development of human societies defined by custom and law). While this understanding has not left obvious traces in the poetic fragments, the latter do contain some interesting reflections on the nature of human thought, a subject which exercised Xenophanes and Heraclitus too, as we have seen.<sup>67</sup> Like Xenophanes (DK21B34) and Heraclitus (fr. 90, 92 Marcovich), Parmenides recognizes the limitations of human knowledge. But where Xenophanes gives men no more than δόκος, Parmenides follows

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63 Fr. 203 Coxon: Παρμενίδης δὲ περὶ τῶν αἰσθητῶν ἄρξασθαί φησι λέγειν, «πῶς γὰρ καὶ ἥλιος ... ὠρμήθησαν γίνεσθαι» [fr. 10 Coxon], καὶ τῶν γιγνομένων καὶ φθειρομένων μέχρι τῶν μορίων τῶν ζώων τὴν γένεσιν παραδίδωσι (Simpl. in *De caelo* 559.20-25).

64 Fr. 41 (ἄπέφηνε [Παρμενίδης] ... γένεσιν τ' ἀνθρώπων ἐξ ἡλίου πρῶτον γενέσθαι: Diog. 9.21-22); 113 Coxon (καὶ γένεσιν ἀνθρώπων ἀγγήγεται [Παρμενίδης]: Plut. *Adv. Colot.* 1114c). Note the resonance with similar accounts about the cosmogonies of Xenophanes (page 40 above) and Anaximander (note 23 above).

65 Fr. 74 Coxon (Παρμενίδης πρῶτος ἀφώρισε τῆς γῆς τοὺς οἰκουμένους τόπους ὑπὸ ταῖς δυοῖς ζώναις ταῖς τροπικαῖς: Aet. 3.11); 99 Coxon (φησὶ δὴ ὁ Ποσειδώνιος τῆς εἰς πέντε ζώνας διαιρέσεως ἀρχηγὸν γενέσθαι Παρμενίδην: Strabo 2.2.1-2); and 99a Coxon: πρῶτος δὲ Παρμενίδης τὸν περὶ τῶν ζωνῶν ἐκίνησε λόγον (Achill. *Isag.* 31).

66 Fr. 16 Coxon (λέγεται δὲ καὶ [Παρμενίδης] νόμους θεῖναι τοῖς πολίταις, ὥς φησι Σπεύσιππος ἐν τῷ περὶ φιλοσόφων: Diog. 9.23); and 116 Coxon: Παρμενίδης δὲ τὴν ἑαυτοῦ πατρίδα διεκόσμησε νόμοις ἀρίστοις, ὥστε τὰς ἀρχὰς καθ' ἕκαστον ἐνιαυτὸν ἐξορκοῦν τοὺς πολίτας ἐμμένειν τοῖς Παρμενίδου νόμοις (Plut. *Adv. Colot.* 1126a-b).

67 For Xenophanes, see the discussion of DK21B34 on pages 41-42 above. For Heraclitus, see the discussion of relevant fragments discussed on p. 49 and note 48 above.

Heraclitus (e.g. fr. 23d-f Marcovich) in positing the possibility that humans have access to something better (what Heraclitus calls alternately τὸ φρονεῖν, σωφρονεῖν, or λόγος).

Witness the poet's initial encounter with the goddess at the gate:

TEXT ( <i>Coxon</i> )	TRANSLATION ( <i>Kingsley</i> ) <sup>68</sup>
<p>χρεὼν δὲ σε πάντα πυθέσθαι, / ἡμὲν ἀληθείης εὐπειθέος ἀτρεμέες ἦτορ / ἡδὲ βροτῶν δόξας, τῆς οὐκ ἔνι πίστις ἀληθείης. / ἀλλ' ἔμπης καὶ ταῦτα μαθήσεται ὥς τὰ δοκεῦντα / χρῆν δοκίμως εἶναι διὰ παντὸς πάντα περῶντα.</p>	<p>And what's needed is for you to learn all things: both the unshaken heart of persuasive Truth and the opinions of mortals in which there is nothing that can be truthfully trusted at all. But even so, this too you will learn—how beliefs based on appearance ought to be believable as they travel through all there is.</p> <p>Parmenides, fr. 1.28-32 Coxon</p> <p>Sext. <i>Adv. math.</i> 7.111</p>

Admitting with Xenophanes that the opinions of mortals are untrustworthy (βροτῶν δόξας, τῆς οὐκ ἔνι πίστις ἀληθείης), the goddess nevertheless holds out some hope that Parmenides can apprehend (πυθέσθαι) “the unshaken heart of persuasive Truth” (ἀληθείης εὐπειθέος ἀτρεμέες ἦτορ) and learn (μαθήσεται) to perceive accurately the shifting appearances apparent to human beings throughout the Greek universe (ὥς τὰ δοκεῦντα χρῆν δοκίμως εἶναι διὰ παντὸς πάντα περῶντα).

The dichotomy between truth and false approximations of it recurs elsewhere in the goddess' teaching:

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68 Kingsley (2003), 27.

TEXT (Coxon)	TRANSLATION (Kingsley) <sup>69</sup>
<p>εἰ δ' ἄγε, τῶν ἐρέω, κόμισαι δὲ σὺ μῦθον  ἀκούσας, / αἶπερ ὁδοὶ μοῦναι διζήσιος εἴσι  νοῆσαι / ἢ μὲν, ὅπως ἐστὶν τε καὶ ὥς οὐκ  ἔστι μὴ εἶναι, / πειθοῦς ἐστι κέλευθος,  ἀληθείῃ γὰρ ὀπηδεῖ, / ἢ δ', ὥς οὐκ ἔστιν  τε καὶ ὥς χρεῶν ἐστι μὴ εἶναι, / τὴν δὴ τοι  φράζω πανταπευθέα ἔμμεν ἀταρπόν· /  οὔτε γὰρ ἂν γνοίης τό γε μὴ ἐόν, οὐ γὰρ  ἄνυστόν, / οὔτε φράσαις.</p>	<p>I will do the talking; and it's up to you to  carry away my words once you have heard  them. What I will tell you is which roads  of inquiry, and which roads alone, exist for  thinking. The one route, that <i>is</i>, and is not  possible not to be, is the way of Persuasion;  for Persuasion is Truth's attendant. And as  for the other, that <i>is not</i>, and is necessary  not to be: this, I can tell you, is a path from  which no news returns. For there is no way  you can recognize what is not—there is no  travelling that path—or tell anything about  it.</p> <p>Parmenides, fr. 3 Coxon</p> <p>Procl. <i>in Tim.</i> 1.345; Simpl. <i>in Phys.</i> 116</p>

Here there are only two ways of thinking, the real way (which exists and is the path of persuasion: πειθοῦς ἐστι κέλευθος) and the unreal (which does not and cannot exist: οὐκ ἔστιν τε καὶ ὥς χρεῶν ἐστι μὴ εἶναι). No matter how hard humans try to walk the unreal path (abstracting themselves and their thought from the reality that exists), they cannot. To borrow a modern metaphor, there is no such thing as thinking outside the box that necessarily contains all human thought; or, in Parmenides' words, it is impossible (οὐ γὰρ ἄνυστόν) to perceive what is not there (οὔτε γὰρ ἂν γνοίης τό γε μὴ ἐόν), i.e. to travel a path that does not exist.<sup>70</sup>

But the path of reality proves difficult to travel:

<sup>69</sup> Kingsley (2003), 60.

<sup>70</sup> This does not stop many (ἄκριτα φῦλα: fr. 5.7 Coxon) from trying (recall the πολλοί of Heraclitus who live as though there were no common λόγος in fr. 23a Marcovich): see fr. 5.4-9 Coxon.

TEXT (Coxon)	TRANSLATION (Kingsley) <sup>71</sup>
<p>             χρή τὸ λέγειν τε νοεῖν τ' ἔδν ἔμμεναι, ἔστι              γὰρ εἶναι, / μηδὲν δ' οὐκ ἔστιν· τά σ' ἐγὼ              φράζεσθαι ἄνωγα / πρώτης γάρ σ' ἀφ'              ὁδοῦ ταύτης διζήσιος &lt;εἵργω&gt;, / αὐτὰρ              ἔπειτ' ἀπὸ τῆς, ἣν δὴ βροτοὶ εἰδότες              οὐδὲν / πλάζονται δίκρανοι, ἀμηχανίη γὰρ              ἐν αὐτῶν / στήθεσιν ἰθύνει πλαγκτὸν              νόον, οἱ δὲ φωρεῦνται / κωφοὶ ὁμῶς              τυφλοὶ τε, τεθηπότες, ἄκριτα φῦλα, / οἷς              τὸ πέλειν τε καὶ οὐκ εἶναι τῶντὸν              νενόμισται / κοῦ τῶντόν, πάντων δὲ              παλίντροπος ἔστι κέλευθος.           </p>	<p>             What exists for saying and for thinking              must be. For it exists for it to be; but              nothing does not exist. You ponder that!              This is the first road of inquiry that I hold              you back from. But then I hold you back              as well from the one that mortals fabricate,              twin-heads, knowing nothing. For              helplessness in their chests is what steers              their wandering minds as they are carried              along in a daze, deaf and blind at the same              time: indistinguishable, undistinguishing              crowds who reckon that being and non-              being are the same but not the same. And,              for all of them, the route they follow is a              path that keeps turning backwards on itself.           </p> <p>             Parmenides, fr. 5 Coxon              = fr. 6 DK           </p> <p>             Simpl. in <i>Phys.</i> 117           </p>

Not only must the poet avoid the way created (πλάζονται) by the double-headed who try to unite existence with non-existence, alienated from their powers of perception (κωφοὶ ὁμῶς τυφλοὶ τε, τεθηπότες, ἄκριτα φῦλα): he is also warned off naïve entry into the path of reality,<sup>72</sup> where the existence of that which people think and talk about is taken for granted (χρή τὸ λέγειν τε νοεῖν τ' ἔδν ἔμμεναι).<sup>73</sup> Here Parmenides is caught in a paradox characteristic of the human condition (generally) and the Greek universe (specifically). On one hand, the human mind imagines regularity extending throughout

71 Kingsley (2003), 83.

72 From the point of view adopted by this study, the debate over the number of paths presented by the goddess (three paths: one real, one unreal, one real-unreal created by mortals; two paths: one real, one unreal) is moot. Either way, fr. 5 Coxon warns the poet off reality (the first path), impeding his journey. For a bibliography on the paths, see Kingsley (2003), 563-565.

73 Since they could not speak or think about it if it were unreal. See Heraclitus, fr. 45 Marcovich: Δίκης ὄνομα οὐκ ἂν ᾗδεσαν εἰ ταῦτα μὴ ᾗν (Clem. *Strom.* 4.9.7).

its familiar environment (as the cosmologies presented thus far imagine the Greek universe constituted in its entirety by repetitive physical processes). On the other, experience shows us that the real world is irregular and discontinuous (like the Greek universe, which was constantly exceeding its geographical barriers and transforming itself internally through revolutions in politics and culture). Many different stories can be told to reduce human reality to some kind of order (as we have seen already in this chapter), but inevitably these leave something out, giving the lie to human wisdom and challenging human pretensions to knowledge. So Parmenides comes to the Critical Tradition suspicious of every mortal δόξα, including the explanations of absolute reality (φύσις) offered by thinkers like himself.<sup>74</sup>

Parmenides' solution to the problem of imperfect human δόξα is complicated and controversial. At its core is a revelation of Being:

TEXT ( <i>Coxon</i> )	TRANSLATION ( <i>Kingsley</i> ) <sup>75</sup>
μόνος δ' ἔτι μῦθος ὁδοῖο / λείπεται, ὥς ἔστιν ταύτηι δ' ἐπὶ σήματ' ἔασι / πολλὰ μάλ', ὥς ἀγέννητον ἔδν καὶ ἀνώλεθρόν ἔστιν, / οὐλον μουννογενές τε καὶ ἀτρεμές ἦδ' † ἀτέλεστον, / οὐδέ ποτ' ἦν οὐδ' ἔσται, ἐπεὶ νῦν ἔστιν ὁμοῦ πᾶν, / ἔν, συνεχές· τίνα γὰρ γένναν διζήσεται αὐτοῦ; / πῇ πόθεν αὐξηθέν; οὔτ' ἐκ μὴ ἐόντος ἑάσω / φάσθαι σ' οὐδὲ νοεῖν, οὐ γὰρ φατὸν οὐδὲ νοητόν / ἔστιν ὅπως οὐκ ἔστι· τί δ' ἄν μιν καὶ χρέος ὦρσεν / ὕστερον ἢ πρόσθεν τοῦ μηδενὸς ἀρξάμενον φῦν; / οὕτως ἦ	There is only one tale of a path left to tell: that <i>is</i> . And along this way there are many, many signs that as well as being birthless it's also deathless and whole and of a single kind and unmoving—and neither is it incomplete. It never was and never will be because it is now, all together, one, holding to itself. For what possible birth of it will you look for? In what way could it have grown? From what? To say or think “from what is not” is something I won't allow you, because there is no saying or thinking

<sup>74</sup> Xenophanes (DK21B34) and Heraclitus (fr. 84, 90, 92 Marcovich) were similarly open to their own fallibility. The question they all seem to grapple with is how to present positive visions of reality without ignoring the fact that such visions inevitably distort the the image they are meant to transmit.

<sup>75</sup> Kingsley (2003), 160, 163-164.



<p>πάμπαν πελέναι χρεών ἐστὶν ἢ οὐκί. / οὐδέ ποτ' ἐκ μὴ ἐόντος ἐφήσει πίστιος ἰσχύς / γίγνεσθαί τι παρ' αὐτό τοῦ εἵνεκεν οὔτε γενέσθαι / οὔτ' ὄλλυσθαι ἀνῆκε δίκη χαλάσασα πέδησιν / ἀλλ' ἔχει, ἡ δὲ κρίσις περὶ τούτων ἐν τῷιδ' ἐστὶν, / ἔστιν ἢ οὐκ ἔστιν· κέκριται δ' οὔν, ὥσπερ ἀνάγκη, / τὴν μὲν ἔαν ἀνόητον ἀνώνυμον, οὐ γὰρ ἀληθείης / ἐστὶν ὁδός, τὴν δ' ὥστε πέλειν καὶ ἐτήτυμον εἶναι. / πῶς δ' ἂν ἔπειτα πέλοιτο ἐόν; πῶς δ' ἂν κε γένοιτο; / εἰ γὰρ ἔγεντ', οὐκ ἔστ', οὐδ' εἴ ποτε μέλλει ἔσεσθαι. / τῶς γένεσις μὲν ἀπέσβεσται καὶ ἄπυστος ὄλεθρος.</p>	<p>that <i>is not</i>. And, besides: if it started out from nothing, what could have made it come into being later rather than sooner? So it must either be, completely, or not be. Neither will the strength of persuasive proof ever permit anything to come into being out of non-being alongside it. And this is why Justice has not allowed freedom for creation or destruction by relaxing her constraining grip. Instead, she holds fast. And the decision in these matters comes down to this—<i>is</i> or <i>is not</i>. But it has already been decided: the judgement has already been passed as necessary that the second of these paths is to be dismissed as unthinkable and unnameable because it's no true way while the other is to be allowed to be, and really be. And how could it be that being could be at some later time? How could it come into being? For if it came to be, it is not; and if at some point it intends to be, then again it is not. So it is that creation has been extinguished, and of destruction there is not a word to be heard.</p> <p>Parmenides, fr. 8.1-21 Coxon</p> <p>Simpl. <i>in Phys.</i> 145-146</p>
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Without getting more technical than necessary,<sup>76</sup> it is possible to discern here an attempt on the poet's part to avoid founding his approach to reality on a naïve narrative of origin and development such as we have found at the core of extant writings in the Critical Tradition. Outside such narratives, Parmenides discovers an undifferentiated, eternal reality (reminiscent of Anaximander's ἄπειρον in its lack of explicit boundaries):

<sup>76</sup> For a thorough treatment of the various problems with this passage and its place in the Parmenidean corpus, see Coxon (2009), 312-352; Mourelatos (2008), 299-386; Kingsley (2003), 160-191, 570-576. I have tried to steer clear of controversy in my summary remarks here.

ἀγέννητον ἐὸν καὶ ἀνώλεθρόν ἐστιν (fr. 8.3); οὐδέ ποτ' ἦν οὐδ' ἔσται (fr. 8.5); οὔτε γενέσθαι οὔτ' ὄλλυσθαι ἀνῆκε δίκη (fr. 8.13-14); γένεσις μὲν ἀπέσβησται καὶ ἄπυστος ὄλεθρος (fr. 8.21 Coxon). Just as Xenophanes' god is an undoing of popular Greek religion (see page 40), so Parmenides' Being is an undoing of all mortal attempts to explain the world-order(s) definitively (including attempts in the Critical Tradition). Where human powers of perception and expression necessarily dictate a world-order defined by change reducible to some kind of fixed physical order (today as in antiquity), Parmenides posited a reality that resists reduction, a wholeness too vast to be named completely by conventional language (or stories created with such language): the most anyone can say of it is that it exists, independent of the limits imposed by our powers of perception, which as a matter of course show us parts instead of the whole and change instead of continuity. The attributes he gives it (ὥς ἀγέννητον ἐὸν καὶ ἀνώλεθρόν ἐστιν, οὔλον μουνογενές τε καὶ ἀτρεμές ἡδ' † ἀτέλεστον: 8.3-4) are given with the intention of separating it from human perceptions of it (the δόξα of Parmenides and Xenophanes, which includes definitions of φύσις in the Critical Tradition). In terms of Critical physics, this reduces all things to unitary Being (since there is no such thing as non-existence in Parmenidean reality), and radically undercuts the authority of origin-and-development narratives (such as those we have already examined from Anaximander, Xenophanes, Heraclitus, and Parmenides himself), since the distinctions that these make between one instance of Being and another are arbitrary and incomplete, separating

Being from itself without compelling reason.<sup>77</sup> Thus, when Parmenides does offer a traditional Critical cosmology, he conscientiously refuses to endorse it as entirely true:

TEXT (Coxon)	TRANSLATION (Coxon)
<p>ἐν τῷ σοι παύω πιστὸν λόγον ἡδὲ νόημα /  ἀμφὶς ἀληθείης, δόξας δ' ἀπὸ τοῦδε  βροτείας / μάνθανε κόσμον ἐμῶν ἐπέων  ἀπατηλὸν ἀκούων. / μορφὰς γὰρ  κατέθεντο δύο γνώμας ὀνομάζειν, / τῶν  μίαν οὐ χρεῶν ἐστίν, ἐν ᾧ πεπλανημένοι  εἰσίν, / ἀντία δ' ἐκρίναντο δέμας καὶ  σήματ' ἔθεντο / χωρὶς ἀπ' ἀλλήλων, τῇ  μὲν φλογὸς αἰθέριον πῦρ, / ἥπιον ὄν, μέγ'  ἐλαφρόν, ἐωυτῷ πάντοσε τωῦτόν, / τῷ δ'  ἐτέρῳ μὴ τωῦτόν, ἀτὰρ κάκεῖνο κατ'  αὐτὸ / τάντία, νύκτ' ἀδαῆ, πυκινὸν δέμας  ἐμβριθὲς τε. / τὸν σοι ἐγὼ διάκοσμον  ἐοικότα πάντα φατίζω, / ὥς οὐ μὴ ποτέ τίς  σε βροτῶν γνώμῃ παρελάσσει.</p>	<p>Therewith I put a stop for you to my  reliable discourse and thought about  reality; from this point learn human beliefs,  heaving the deceptive composition of my  verse. For they resolved to name two  Forms (of which it is wrong to name only  one, wherein men have gone astray), and  they chose opposites in body and assigned  them marks separate from one another, on  the one hand aetherial fire of flame, being  mild, immensely light, the same with itself  in every direction but not the same as the  other; that, on the other hand being  likewise in itself the opposites,  unintelligent night, a dense and heavy  body. This order of things I declare to you  to be likely in its entirety, in such a way  that never shall any mortal outstrip you in  practical judgment.</p> <p>Parmenides, fr. 8.50-61 Coxon</p> <p>Simpl. in <i>Phys.</i> 38-39</p>

Parmenides' goddess here exposes her own διάκοσμος (the physical world-order defined by light and dark, fire and earth) as a deceptive rhetorical ornament (κόσμον ἐμῶν ἐπέων ἀπατηλὸν), an artificial imposition on reality that can only be likely (ἐοικότα): it cannot capture the whole truth of Being, which transcends the limits of the simple oppositions

<sup>77</sup> See fr. 6 Coxon: λεῦσσε δ' ὅμως ἀπεόντα νόωι παρεόντα βεβαίως / οὐ γὰρ ἀποτμήξει τὸ ἐὸν τοῦ ἐόντος ἔχθεσθαι / οὔτε σκιδνάμενον πάντῃ πάντως κατὰ κόσμον / οὔτε συνιστάμενον (Clem. *Strom.* 5.15). Remember that persuasion is an essential part of the path of being: χρεὼ δὲ σε πάντα πυθέσθαι ... ἀληθείης εὐπειθέος ἀτρεμές ἦτορ (fr. 1.28-29 Coxon); πειθοῦς ἐστὶ κέλευθος (fr. 3.4 Coxon).

that define all cosmologies in the Critical Tradition (including the light-dark dichotomy in Parmenides' poem). It is just another instance of mortal opinion (δόξας ... βροτείας) as opposed to real knowledge of Being, which it approaches (τόν σοι ἐγὼ διάκοσμον ἐοικότα πάντα φατίζω) without attaining. The most that the poet-philosopher can do with it is avoid being passed (on the road of perceiving and expressing absolute Being?) by other mortals (ὥς οὐ μή ποτέ τις σε βροτῶν γνώμη παρελάσσει).<sup>78</sup>

One more thing remains to be addressed here. I originally presented Parmenides' ideas on Being as ideas about human thought (see page 57), a decision justified by the poet's constant usage of “thought” words: δόξας (1.30, 8.51); νοῆσαι (3.2); γνώης (3.7); νοεῖν (5.1, 8.8); εἰδότες (5.4); νόον (5.6); νοητόν (8.8); ἀνόητον (8.17); νόημα (8.50); γνώμας (8.53); γνώμη (8.61 Coxon). But there are many indications that Parmenides does not separate thought strictly from other forms of perception (especially sight and hearing) and expression (especially speech) available to human beings. Thus, the goddess speaks of ἄκριτα φύλα who cannot see (being τυφλοί) as they struggle in vain to fashion an alternative to the path of Being (fr. 5.6-7 Coxon).<sup>79</sup>

Likewise, she makes audible words—e.g. κόμισαι δὲ σὺ μῦθον ἀκούσας (fr. 3.1

<sup>78</sup> For δόξα as a mediator between mortals and being (i.e. everything), see Mourelatos (2008), 259-263. For the significance of the metaphor of being passed (taken from epic depictions of charioteering), see Kingsley (2003), 221-224, 578-579.

<sup>79</sup> See also fr. 7 Coxon: οὐ γὰρ μή ποτε τοῦτο δαμῆι, εἶναι μὴ ἐόντα, / ἀλλὰ σὺ τῆσδ' ἄφ' ὁδοῦ διζήσιος νόημα / μηδέ σ' ἔθος πολύπειρον ὁδὸν κατὰ τήνδε βιάσθω, / νωμᾶν ἄσκοπον ὄμμα καὶ ἠχήεσσιν ἀκουήν / καὶ γλῶσσιν κρῖναι δὲ λόγῳ πολύδηριν ἔλεγχον / ἐξ ἐμέθεν ῥηθέντα· μόνος δ' ἔτι μῦθος ὁδοῖο / λείπεται (varia). The nature of the λόγος here is unclear: some have seen it as the voice of (dialectical) reason, but this is not necessarily true: see Kingsley (2003), 120-131, 568-570. The safest conclusion is that whatever Parmenidean λόγος is, it represents an expressible synthesis of what we would see as separate human perceptions (e.g. sight, hearing, and thought, which are the poet's favorite three).

Coxon); *μόνος δ' ἔτι μῦθος ὁδοῖο λείπεται* (fr. 8.1-2 Coxon)—signs along that path, with thinking and speaking paired together as parallel facets of Being—e.g. *χρὴ τὸ λέγειν τε νοεῖν τ' ἐὸν ἔμμεναι* (fr. 5.1 Coxon); *ἐν τῷ σοι παύω πιστὸν λόγον ἡδὲ νόημα ἀμφὶς ἀληθείης* (fr. 8.50-51 Coxon). The blurring of boundaries between different forms of perception and expression invoked in Parmenides' poem is probably intentional, since all are ultimately one and the same thing for the poet, namely Being.

As extant, Parmenides' way of Being is perceptual, with signs (*σήματα*: fr. 8.2 Coxon) existing in perceived reality (and its reflections in human *δόξα*) that allow the poet to recognize the artificial (and incomplete) nature of his understanding, giving him the perspective he needs to reject the absolute reality of competing signs (*σήματα*: fr. 8.55 Coxon) that appear when undiscerning people separate Being from itself improperly by distinguishing distinct forms (*μορφὰς γὰρ κατέθεντο δύο γνώμας ὀνομάζειν*: fr. 8.53 Coxon). The idea of perception and expression (including thought) as something real (i.e. Being)<sup>80</sup> that leaves traceable marks in material reality is an important insight that Parmenides shares with the atomists, an insight for which later thinkers take them both to task.<sup>81</sup> Parmenides' concern with the inadequacy of human expression to capture reality with transparent accuracy provides another point of contact with extant atomist thought (e.g. Democritus, fr. 563 Luria). While we know little about the ethics that Parmenides married to these ideas, the record has been kinder in the case of the atomists (as we will see). For now it is enough to notice Parmenides' interest (1) in finding the limits that

<sup>80</sup> See fr. 4 Coxon: *τὸ γὰρ αὐτὸ νοεῖν ἐστὶν τε καὶ εἶναι* (varia).

<sup>81</sup> See e.g. Theophr. *De Sensu* 4 (Parmenides), 58 (Democritus).

constrain ordinary human perceptions and expressions of material reality, and (2) transcending those limits (with a divine revelation: *χρεὼ δὲ σε πάντα πυθέσθαι ... ἀληθείης εὐπειθέος ἀτρεμὲς ἦτορ* [fr. 1.28-29 Coxon]).

### **Empedocles (1.3.5)**

Empedocles of Acragas (c. 492-432) is credited with various written works, none of which survives intact. All that we have is a large collection of fragments in hexameter (138 in the latest collation), of which only eleven come with specific attribution to one of two original texts: eight purport to derive from a poem on physics (sometimes referred to under the title *Περὶ φύσεως*) and three from a poem *Καθαρμοί*.<sup>82</sup> Modern students of the fragments have been unable to discover any clear distinction between these two poems: it is impossible to tell whether the first (*Περὶ φύσεως*) is original (and separate from the second) or an illusion created by ancient readers referring to the same work in different contexts. Most recent work has tended to support the thesis that Empedocles originally wrote only one poem (whose original title was probably *Καθαρμοί*).<sup>83</sup> Whatever the original form(s) in which Empedocles' ideas were published, their remains offer a familiar perspective on the Greek universe.

(1) *Cosmogony*. Like other authors in the Critical Tradition, Empedocles recognizes the existence of a permanent material reality (analogous to Anaximander's *ἄπειρον*, Xenophanes' *γαῖα*, Heraclitus' *πῦρ*, and Parmenides' *εἶόν*) underlying the perceived reality observed by human beings (a reality that seems impermanent, subject to

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<sup>82</sup> See frs. 1, 13, 21, 25, 67, 62, 85, 95, 98 Inwood, and fr. B153a DK; Inwood (1992), 11-12.

<sup>83</sup> Naddaf (2005), 141; Kingsley (1995), 217-232; (2002); (2003), 322-325; Inwood (1992), 13-19.

creation and destruction).<sup>84</sup> He calls that permanent reality φύσις, using terminology which characterizes the world-order as live and growing<sup>85</sup> even as he deliberately denies the implication that that order arises from nothing or dies away into nothing (as living, growing things seem to do in the world perceived by humans):

TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
ἄλλο δέ τοι ἔρέω φύσις οὐδενός ἐστιν ἀπάντων / θνητῶν, οὐδέ τις οὐλομένου θανάτοιο τελευτή, / ἀλλὰ μόνον μίξις τε διάλλαξις τε μιγέντων / ἐστί, φύσις δ' ἐπὶ τοῖς ὀνομάζεται ἀνθρώποισιν.	I shall tell you something else. There is no growth of any of all mortal things nor any end in destructive death, but only mixture and interchange of what is mixed exist, and growth is the name given to them by men.  Empedocles, fr. 21 Inwood = fr. 12 Wright = fr. B8 DK  Aet. 1.30.1

Unlike Parmenides' Being or Anaximander's ἄπειρον, Empedocles' φύσις does not resist authoritative deconstruction: it can be broken down into component parts without losing its integrity.<sup>86</sup> These parts are four roots (τέσσαρα ... πάντων ριζώματα: fr. 12 Inwood) whose mixture (μίξις) and separation (διάλλαξις: fr. 21 Inwood) provide a permanent reality behind the illusion of material change (e.g. birth, growth, decay, death) that human beings perceive as real. Each root is a homogenous material element (earth, air, fire,

84 In addition to fr. 21 Inwood (quoted in the text), see fr. 18 Inwood (ἐκ γὰρ τοῦ μὴ ἐόντος ἀμήχανον ἐστὶ γενέσθαι, / καὶ τ' ἐὼν ἐξαπολέσθαι ἀνήνυστον καὶ ἄπυστον / αἰεὶ γὰρ τῇ γ' ἔσται ὅπῃ κέ τις αἰὲν ἐρείδῃ: [Aristot.], *MXG* 975a36; Philo, *Aet. mund.* 2) and fr. 23 Inwood: νήπιοι οὐ γὰρ σφιν δολιχόφρονές εἰσι μέριμναι, / οἳ δὴ γίγνεσθαι πάρος οὐκ ἐὼν ἐλπίζουσιν, / ἢ τι καταθνήσκουσιν τε καὶ ἐξόλλυσθαι ἀπάντη (Plut. *Adv. Colot.* 1113c).

85 See page 32 above (Anaximander) and Naddaf (2005), 70-74.

86 Contrast Empedocles' confidence in fr. 14-15 Inwood (where he insists that human perception is clear and human power over nature effective) with the ambivalence of Parmenides' goddess in fr. 8.50-52 Coxon (quoted on page 64 above). Note that Anaximander's use of the word ἄπειρον to describe the material universe puts similar emphasis on the lack of effective, definitive boundaries.

water) named after a god (Hera, Zeus, Hades, Nestis).<sup>87</sup> In familiar fashion, the constant mixture and separation of the four elements create a cosmic cycle:

TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
δίπλ' ἐρέω· τοτὲ μὲν γὰρ ἓν ἡυξήθη μόνον εἶναι / ἐκ πλεόνων, τοτὲ δ' αὖ διέφυ πλέον' ἐξ ἑνὸς εἶναι / πῦρ καὶ ὕδωρ καὶ γαῖα καὶ ἥερος ἄπλετον ὕψος / νεϊκός τε οὐλόμενον δίχα τῶν, ἀτάλαντον ἀπάντη, / καὶ φιλότης ἐν τοῖσιν, ἴση μῆκος τε πλάτος τε·	I shall tell a double tale. For at one time they grew to be one alone from many, and at another, again, they grew apart to be many from one—fire and water and earth and the boundless height of air; and destructive strife apart from these, like in every respect, and love among them, equal in length and breadth.  Empedocles, fr. 25.16-20 Inwood = fr. 8 Wright = fr. B17 DK  Simpl. in <i>Phys.</i> 157.25

The elements grow together to make one whole (ἓν ἡυξήθη μόνον εἶναι) under the influence of love (φιλότης, also referred to as the goddess Aphrodite: fr. 25.24 Inwood). They grow apart to create many things (διέφυ πλέον' ἐξ ἑνὸς εἶναι) under the influence of strife (νεϊκος). The progression from one (the world-order of love) to many (the world-order of strife) and back again recurs continually: ἧι δὲ διαλλάσσοντα διαμπερὲς οὐδαμὰ λήγει, ταύτηι δ' αἰὲν ἔασιν ἀκίνητοι κατὰ κύκλον (fr. 25.12-13 Inwood).<sup>88</sup> From the perspective of the elements caught in eternal oscillation between love and strife, mortality is an illusion, since the dissolution (or death) of one temporary combination of

<sup>87</sup> See fr. 12, 39, 40 Inwood; Kingsley (1995), 13-68.

<sup>88</sup> “But insofar as they never cease from constantly interchanging, in this respect they are always unchanged in a cycle” (trans. Inwood). Notice the resonance with Anaximander's creation of the world-order(s) from warmth and cold (DK12A10) and Parmenides' invocation of light and dark (fr. 11.3-4 Coxon and the sources referenced in note 60 above).



the elements is really just the creation (or birth) of another combination of those same elements: *δοιή δὲ θνητῶν γένεσις, δοιή δ' ἀπόλειψις· τὴν μὲν γὰρ πάντων σύνοδος τίκτει τ' ὀλέκει τε, ἡ δὲ πάλιν διαφυομένων θρεφθεῖσα διέπτει* (fr. 25.3-5 Inwood).<sup>89</sup> While much is lacking, there is evidence (in other fragments and the doxography) that Empedocles told a more detailed story of the origin and development of the Greek universe, tracing its development from an original unity (an instantiation of the world-order defined by love) toward increasing disunity (an instantiation of the world-order defined by strife, whose realization will reset the cycle at some future period).<sup>90</sup>

(2) *Zoogony* & (3) *Anthropogony*. Empedocles' story of the growth of the Greek κόσμος<sup>91</sup> explicitly included plant, animal, and human life.<sup>92</sup> A number of fragments hint that it included κόσμοι before and after the familiar Greek, world-orders wherein biological life exists in alternative forms (the antecedents or descendants of the normal forms of life familiar to the Greek world-order). In orders prior to the Greek, limbs and organs exist independent of bodies,<sup>93</sup> coalescing occasionally to form different kinds of

89 “And there is a double coming to be of mortals and a double waning; for the coming together of them all gives birth to and destroys the one, while the other, as they again grow apart, was nurtured and flew away” (trans. Inwood). For more on mortality as an illusion, see fr. 18, 22, 23 Inwood.

90 See fr. 39-40, 61-62, 103 Inwood; fr. 360-372 KRS. Synthesizing the quotations and doxographical entries in KRS, it appears that a vortex (δίνη) separates the four elements into homogenous masses at the height of strife's influence and then begins the process of combining them that leads eventually to the formation of a world-order dominated by unifying love. Strife infiltrates this arrangement, creating conflicted world-orders like the one familiar to Empedocles' audience on the way toward separating the elements to begin the cycle over again. See Inwood (1992), 43-46.

91 Empedocles uses this word to indicate world-order in fr. 28.5 Inwood.

92 See the discussion of the four elements in fr. 28.4 (γίγνοντ' ἀνθρωποὶ τε καὶ ἄλλων ἔθνεα θηρῶν) and the story of the wandering limbs in fr. 38.6-7 Inwood (ὥσαύτως θάμνοισι καὶ ἰχθύσιν ὕδρομελᾶθοις / θηρσί τ' ὀρειλεχέεσσιν ἰδὲ πτεροβάμοσι κύμβαις).

93 See fr. 38.1-5 Inwood (τοῦτο μὲν ἂμ' βροτέων μελέων ἀριδείκετον ὄγκον· ἄλλοτε μὲν φιλότῃτι συνερ-χόμεν' εἰς ἓν ἅπαντα γυῖα, τὰ σῶμα λέλογχε, βίου θαλέθοντος ἐν ἀκμῇ· ἄλλοτε δ' αὐτε κακῇσι διατ-μηθέντ' ἐρίδεσσι πλάζεται ἄνδιχ' ἕκαστα περὶ ῥηγμῖνι βίοιο: Simpl. in *Phys.* 1124.7); fr. 62 Inwood (ἡ δὲ χθὼν ἐπίηρος ἐν εὐτύκτοις χοάνοισι τὰς δύο τῶν ὀκτῶ μοιράων λάχε Νήστιδος αἴγλης, τέσσαρα δ')

strange monsters.<sup>94</sup> According to doxographers, Empedocles says that some monsters accidentally acquire attributes necessary for survival,<sup>95</sup> enabling them to continue the compounding mixture of elements that eventually (in a later κόσμος) produces modern species of life<sup>96</sup> (including human beings)<sup>97</sup> familiar to the Greeks. The multi-stage evolution of life offered here—e.g. (a) wandering limbs; (b) monsters; (c) modern species—is more developed than earlier accounts (as extant: if we had more material from

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Ἡφαίστιοι· τὰ δ' ὅστέα λευκὰ γέγοντο, ἀρμονίης κόλλησιν ἀρηρότα θεσπεσίησιν: Simpl. in Phys. 300.19); fr. 64 Inwood (ἡ πολλὰ μὲν κόρσαι ἀναύχενες ἐβλάστησαν. γυμνοὶ δ' ἐπλάζοντο βραχίονες εὐνίδες ὤμων, ὄμματα τ' οἱ ἐπλανᾶτο πενητεύοντα μετώπον (Simpl. in De caelo 586.7) and fr. 98 Inwood: ἡ δὲ χθὼν τούτοις ἴση συνέκυρσε μάλιστα, Ἡφαίστω τ' ὄμβρῳ τε καὶ αἰθέρι παμφανώνντι, Κύπριδος ὀρμιθεῖσα τελείους ἐν λιμένεσσιν, εἴτ' ὀλίγον μείζων εἴτ' ἐν πλεόνεσσιν ἐλάσσων. ἐκ τῶν αἱμά τ' ἔγεντο καὶ ἄλλης εἶδεα σαρκός (Simpl. in Phys. 32.6). Fr. 38 discusses wandering limbs generally as being separated by cosmic strife. Fr. 62 records the origin of bones (and cartilage?). Fr. 64 gives heads without necks, arms without shoulders, and eyes without foreheads. Fr. 98 records the origin of blood and other forms of flesh (brought together under the influence of Aphrodite, i.e. cosmic love).

- 94 Fr. 66 Inwood: πολλὰ μὲν ἀμφιπρόσωπα καὶ ἀμφίστερνα φύεσθαι, βουγενῇ ἀνδρόπρωιρα, τὰ δ' ἔμπαλιν ἐξανατέλλειν ἀνδροφυῇ βούκρανα, μεμιγμένα τῇ μὲν ἀπ' ἀνδρῶν τῇ δὲ γυναικοφυῇ, σκιεροῖς ἡσκημένα γυίοις (Ael. N. a. 16.299). See also fr. 61.11-17 Inwood, which credits the origin of mortal beings to the influence of love (φιλότης) in the wake of strife's reaching the outer limits of the vortex (δίνη).
- 95 Fr. 380 KRS: ὅπου μὲν οὖν ἅπαντα συνέβη ὥσπερ κἂν εἰ ἔνεκα τοῦ ἐγίνετο, ταῦτα μὲν ἐσώθη ἀπὸ τοῦ αὐτομάτου συστάντα ἐπιτηδείως ὅσα δὲ μὴ οὕτως, ἀπώλετο καὶ ἀπόλλυται, καθάπερ Ἐμπεδοκλῆς λέγει τὰ «βουγενῇ ἀνδρόπρωιρα» (Aristot. Phys. 2. 8.198b29 = Empedocles, fr. B61 DK).
- 96 The most complete account of this evolution is preserved by Aetius (5.19.5 = fr. 375 KRS), who distinguishes four stages in Empedoclean biological evolution: (1) isolated body parts; (2) fantasy creatures with body parts combined; (3) homogenous creatures; (4) creatures with the ability to reproduce sexually (unlike previous generations, which came from earth and water). In the text above, stage (a) *wandering limbs* corresponds to Aetius' stage (1), stage (b) *monsters* to Aetius stages (2) & (3), and stage (c) *modern species* to Aetius stage (4).
- 97 The evolution of human beings from primitive limbless ὄρπηκες is described briefly in fr. 67 Inwood (νῦν δ' ἄγ' , ὅπως ἀνδρῶν τε πολυκλαύτων τε γυναικῶν ἐννυχίους ὄρπηκας ἀνήγαγε κρινόμενον πῦρ, τῶνδε κλυῖ οὐ γὰρ μῦθος ἀπόσκοπος οὐδ' ἀδαήμων. οὐλοφυεῖς μὲν πρῶτα τύποι χθονὸς ἐξανέτελλον, ἀμφοτέρων ὕδατός τε καὶ εἶδος αἶσαν ἔχοντες· τοὺς μὲν πῦρ ἀνέπεμπε θέλον πρὸς ὁμοῖον ἰκέσθαι, οὔτε τί πω μελέων ἐρατὸν δέμας ἐμφαίνοντας, οὔτ' ἐνοπήν οὔτ' αὖ ἐπιχώριον ἀνδράσι γυῖον: Simpl. in Phys. 381.31) and in more detail by Aetius: Ἐμπεδοκλῆς ὅτε ἐγεννᾶτο τὸ τῶν ἀνθρώπων γένος ἐκ τῆς γῆς, τοσαύτην γενέσθαι τῷ μήκει τοῦ χρόνου διὰ τὸ βραδυπορεῖν τὸν ἥλιον τὴν ἡμέραν, ὅποση νῦν ἐστὶν ἡ δεκάμηνος προϊόντος δὲ τοῦ χρόνου τοσαύτην γενέσθαι τὴν ἡμέραν, ὅποση νῦν ἐστὶν ἡ ἐπτάμηνος διὰ τοῦτο καὶ τὰ δεκάμηνα καὶ τὰ ἐπτάμηνα, τῆς φύσεως τοῦ κόσμου οὕτω μεμελετηκυίας, αὔξεσθαι ἐν μιᾷ ἡμέρᾳ ἣν τίκεται [νυκτὶ] τὸ βρέφος (5.18.1 = fr. 382 KRS; Empedocles, fr. A75 DK). See also fr. 72 Inwood, which puts the origin of masculine beings in the warmer part of the earth to explain male darkness, strength, and hairiness.

previous authors, then it might seem less innovative).<sup>98</sup> The precise place of this theory of biological evolution in Empedocles' cosmic love-strife cycle is disputed, owing to gaps in the evidence;<sup>99</sup> for our purposes, it is enough that this theory exists, and that it was joined (somehow) to the love-strife cycle:

TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
<p>ἐν δὲ μέρει κρατέουσι περιπλομένοιο κύκλοι, / καὶ φθίνει εἰς ἄλληλα καὶ αὖξεται ἐν μέρει αἴσης. / αὐτὰ γὰρ ἔστιν ταῦτα, δι' ἀλλήλων δὲ θέοντα / γίγνont' ἄνθρωποί τε καὶ ἄλλων ἔθνεα θηρῶν, / ἄλλοτε μὲν φιλότῃτι συνερχόμεν' εἰς ἓνα κόσμον, / ἄλλοτε δ' αὖ δίχ' ἕκαστα φορούμενα νείκεος ἔχθει, / εἰσόκεν ἔν συμφύντα τὸ πᾶν ὑπένερθε γένηται.</p>	<p>And in turn they [the four elements] dominate as the cycle goes around, and they shrink into each other and grow in the turns assigned by destiny. For these very things are, and running through each other they become men and the tribes of other beasts, at one time coming together by love into one cosmos, and at another time all being borne apart separately by the hostility of strife, until by growing together as one they are totally subordinated.</p> <p>Empedocles, fr. 28.1-7 Inwood = fr. 16 Wright = fr. B26 DK</p> <p>Simpl. <i>in Phys.</i> 33.18</p>

A final important piece of Empedocles' account of zoogony and anthropogony is his view of deity. Like other authors in the Critical Tradition, Empedocles is a materialist: all things are material things. This includes the gods, among whom are the four roots (named after traditional deities) as well as cosmic love (sometimes called Aphrodite) and strife, which are conceived as particular material arrangements that wax

<sup>98</sup> Notice that Parmenides too is supposed to have discussed the origin of body parts separate from bodies: see note 63 above.

<sup>99</sup> It is not exactly clear how things work when the world-order of love begins to disintegrate as strife regains dominance. For a summary of the problems, see Inwood (1992), 41-46.

and wane throughout the cycle that defines existence.<sup>100</sup> In addition to these six gods, explicitly immortal,<sup>101</sup> Empedocles recognizes others: (a<sub>1</sub>) long-lived gods (θεοὶ δολιχαίωνες: fr. 26.12 Inwood) or δαίμονες (frr. 11.5; 65 Inwood); and (b<sub>1</sub>) an ambiguous divinity or divinities reminiscent of Xenophanes' god (frr. 109-110 Inwood).

(a<sub>1</sub>) We know two things about the long-lived gods. (a<sub>1</sub>.1) First, they have sworn off murder (φόνος); any god who breaks faith is condemned by an oracle of necessity (ἀνάγκης χρῆμα, θεῶν ψήφισμα παλαιόν: fr. 11.1 Inwood) to leave the others (ἀπὸ μακάρων ἀλάλασθαι: 11.6) and pass through every form of mortal existence (plant, animal, and human) in the cycle of love and strife (φύομενον παντοῖα διὰ χρόνου εἶδεα θνητῶν ἀργαλέας βιότοιο μεταλλάσσοντα κελεύθους: 11.7-8) before returning. Every living thing is thus (at least potentially) divine in two senses: it is constituted by the six immortals, and it might contain an exiled δαίμων.<sup>102</sup> (a<sub>1</sub>.2) Second, outcast gods experience certain kinds of human life near the end of their exile: prophets, singers, doctors, and leaders are reborn as θεοί (fr. 136 Inwood), restoring their exiled δαίμονες to communion with the μάκαροι who have forsworn murder.<sup>103</sup>

100 On the material reality of cosmic love and strife, see Inwood (1992), 31-39.

101 See fr. 25.30-35 Inwood: καὶ πρὸς τοῖς οὐδ' ἄρ τι ἐπιγίνεται οὐδ' ἀπολήγει· εἴτε γὰρ ἐφθείροντο διαμπερές, οὐκέτ' ἂν ἦσαν. τοῦτ' ἂν ἐπαυξήσῃ τὸ πᾶν τί κε, καὶ πόθεν ἐλθόν; πῆι δέ κε κῆξαπόλοιτο, ἐπεὶ τῶνδ' οὐδὲν ἐρῆμον; ἀλλ' αὐτ' ἔστιν ταῦτα, δι' ἀλλήλων δὲ θέοντα γίγνεται ἄλλοτε ἄλλα καὶ ἡνεκὲς αἰὲν ὁμοῖα (Simpl. in Phys. 157.25).

102 See fr. 113 Inwood (σαρκῶν ἀλλογνῶτι περιστέλλουσα χιτῶνι: Stob. 1.49.60), fr. 135 Inwood (ἐν θήρεσσι λέοντες ὀρειλεχέες χαμαιεῦναι γίνονται, δάφναι δ' ἐνὶ δένδρεσιν ἡυκόμοισιν: Ael. N. a. 12.7), and frr. 401-409 KRS.

103 Empedocles portrays himself as a god returning from exile and mentions his δαίμων spending time in other mortal bodies: see frr. 1.4 Inwood (ἐγὼ δ' ὑμῖν θεὸς ἄμβροτος οὐκέτι θνητός: varia); 11.13-14 Inwood (τῶν καὶ ἐγὼ νῦν εἰμι, φυγὰς θεόθεν καὶ ἀλήτης, νείκει μαινομένῳ πίσυνος: varia); 111 Inwood: ἤδη γάρ ποτ' ἐγὼ γενόμην κοῦρός τε κόρη τε θάμνος τ' οἰωμός τε καὶ τῆξ ἁλὸς ἔμπορος† ἰχθύς (Hippol. Refut. 1.3.1).

(b<sub>1</sub>) Two fragments recognize a familiar kind of deity:

TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
οὐκ ἔστιν πελάσασθαι ἐν ὀφθαλμοῖσιν ἐφικτόν / ἡμετέροις ἢ χερσὶ λαβεῖν, ἥιπερ τε μεγίστη / πειθοῦς ἀνθρώποισιν ἀμαξι- τὸς εἰς φρένα πίπτει.	It is not achievable that we should approach [it/him] with our eyes or grasp [it/him] with our hands, by which the greatest road of persuasion extends to men's thought organ.  Empedocles, fr. 109 Inwood = fr. 96 Wright = fr. B133 DK  Clem. <i>Strom.</i> 5.81.2
οὐδὲ γὰρ ἀνδρομέῃ κεφαλῇ κατὰ γυῖα κέκασται, / οὐ μὲν ἀπὸ νώτοιο δύο κλάδοι αἰσσοῦσι, / οὐ πόδες, οὐ θοὰ γοῦν', οὐ μήδεα λαχνήεντα, / ἀλλὰ φρήν ἱερὴ καὶ ἀθέσφατος ἔπλετο μῦνον, / φροντίσι κόσμον ἅπαντα καταίσσοῦσα θοῇσιν.	For [it/he] is not fitted out in [its/his] limbs with a human head, nor do two branches dart from [its/his] back nor feet, nor swift knees nor shaggy genitals; but it/he is only a sacred and ineffable thought organ daring through the entire cosmos with swift thoughts.  Empedocles, fr. 110 Inwood = fr. 97 Wright = fr. B135 DK  Ammon. <i>in Int.</i> 249.1

Clement identifies Empedocles' sense-elusive deity as τὸ θεῖον. Ammonius uses the

same generic term to identify the sacred φρήν, but adds that it is nominally Apollo.<sup>104</sup>

Whatever the original idea of divinity here, it is reminiscent of Xenophanes, whose

μέγιστος θεός is similarly non-anthropomorphic (DK21B11-12, B14-16) and difficult to

perceive (καὶ τὸ μὲν οὖν σαφὲς οὐτὶς ἀνὴρ ἴδεν ... ἀμφὶ θεῶν: DK21B34.1). Thus, it is

<sup>104</sup> διὰ ταῦτα δὲ καὶ ὁ Ἀκραγαντῖνος σοφὸς ἐπιρραπίσας τοὺς περὶ θεῶν ὡς ἀνθρωποειδῶν ὄντων παρὰ τοῖς ποιηταῖς λεγομένους μύθους, ἐπήγαγε προηγουμένως μὲν περὶ Ἀπόλλωνος, περὶ οὗ ἦν αὐτῷ προσεχῶς ὁ λόγος, κατὰ δὲ τὸν αὐτὸν τρόπον καὶ περὶ τοῦ θεοῦ παντὸς ἀπλῶς ἀποφαινόμενος [fr. 110 Inwood follows].

not surprising that a case can be made for recognizing the sacred φρῆν as Empedocles' highest deity (equivalent to the μέγιστος θεός).

Elsewhere we learn that the shape of the world-order dominated by cosmic love is spherical (fr. 33 Inwood = fr. 21 Wright), and we find the love-sphere described in terms reminiscent of the sacred φρῆν:

TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
οὐ γὰρ ἀπὸ νώτοιο δύο κλάδοι αἰσσονται, / οὐ πόδες, οὐ θοὰ γοῦν', οὐ μήδεα γεννήεντα ... ἀλλ' ὅ γε πάντοθεν ἴσος <ἐοῖ> καὶ πάμπαν ἀπείρων, / σφαῖρος κυκλο- τερὴς μονίῃ περιηγεί γαίων.	For two branches do not dart from its back, nor feet nor swift knees nor potent genitals ... but it indeed is equal <to itself> on all sides and totally unbounded, a rounded sphere rejoicing in its surrounding solitude.  Empedocles, fr. 34 Inwood = fr. 22 Wright = fr. B29, B28 DK  Hippol. <i>Refut.</i> 7.92.13; Stob. 1.15.2

The love-sphere is homogenous, lacking the same distinct members that the sacred φρῆν does not have (branches from the back, feet, knees, and gonads). Its homogeneity is an expression of harmony (ἁρμονίη),<sup>105</sup> the same harmony that mixes the four roots to form mortal bodies (e.g. fr. 62.4 Inwood). It is tempting to understand the sacred φρῆν as the most powerful expression of this harmony (which waxes with cosmic love and wanes with cosmic strife). On this reading of Empedocles, the spherical κόσμος that love creates constitutes (or perhaps better embodies or facilitates) a universal φρῆν whose awareness reaches the entire κόσμος perfectly, like the thought of Xenophanes' god.<sup>106</sup>

105 Fr. 33.2-3 Inwood: οὕτως ἁρμονίης πυκινῶι κρυφῶι ἐστήρικται, σφαῖρος κυκλοτερὴς μονίῃ περιηγθεῖ γαίων (*Simpl. in Phys.* 1183.24).

106 See fr. 110.4-5 Inwood (ἀλλὰ φρῆν ἱερὴ καὶ ἀθέσφατος ἔπλετο μῶνον, φροντίσι κόσμον ἅπαντα

Then strife separates the homogenous κρήσις of the roots, interrupting the integration of the sphere (and the awareness of the sacred φρήν) and creating (the illusion of) mortality (defined by disintegration). But the φρήν never ceases to exert some control over everything,<sup>107</sup> and it eventually recovers full awareness and expression with the reintegration of the love-sphere.<sup>108</sup> One is reminded of Xenophanes' god perceiving everything οὔλος (DK21B24) and moving all things with thought (DK21B25): Empedocles' sacred φρήν seems similarly immanent, the only obvious difference being that its power waxes and wanes (tracking the love-strife cycle) while Xenophanes' god remains the same always, never moving (DK21B26).<sup>109</sup>

(4) *Ethics (Politogony?)*. Like Parmenides, Empedocles is fundamentally concerned with perception in the human individual, who must open his mind (one or more thinking organs referred to as the φρήν, σπλάγχνα, πραπίδες, νόος, or καρδίη) to (material) emanations coming from the entire κόσμος (the constant mixture and separation of the four roots, presided over by cosmic love and strife, embodying the sacred φρήν).<sup>110</sup> As the sacred φρήν is the center of awareness in the κόσμος, so the individual's φρήν is the center of his personal awareness, the place where all his perceptions (impressions from incoming emanations) come together (through the πόροι

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καταίσσουσα θοήσιν: quoted on page 74) and DK21B25 (Xenophanes): ἀλλ' ἀπάνευθε πόνοιο νόου φρενὶ πάντα κραδαίνει (Simpl. in *Phys.* 23.19).  
107 See fr. 16.10 Inwood (πάντα γὰρ ἴσθι φρόνησιν ἔχειν καὶ νόματος αἴσαν: Hippol. *Refut.* 7.29.25) in addition to the fr. quoted in note 106 above.  
108 This is the thesis of Drozdek (2007), 77-78.  
109 See Drozdek (2007), 78-79.  
110 See fr. 3, 4, 6, 8, 16, 88, 96 Inwood, Theophr. *De Sensu* 7-12, and Drozdek (2007), 78-80.

that are sense-organs, i.e. eyes, ears, etc.)<sup>111</sup> and integrate to form a coherent perspective on reality (φύσις: fr. 21 Inwood). The individual perceives reality (φύσις) by his (physical) likeness to it:

TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
γαίῃ μὲν γὰρ γαῖαν ὁπώπαμεν, ὕδατι δ' ὕδωρ, / αἰθέρι δ' αἰθέρα διόν, ἀτὰρ πυρὶ πῦρ αἴδηλον, / στοργὴν δὲ στοργῇ, νεῖκος δέ τε νεϊκεῖ λυγρῶι.	By earth we see earth; by water, water; by aither, shining aither; but by fire, blazing fire; love by love and strife by baneful strife.  Empedocles, fr. 17 Inwood = fr. 77 Wright = fr. B109 DK  Aristot. <i>De anima</i> 404b8

The six immortals (four roots, love, and strife) integrate the individual as well as the κόσμος: through his own earth, water, air, fire, love, and strife, the individual perceives earth, water, air, fire, love, and strife in his environment. The interplay between cosmic elements (the four roots, love, and strife) creates a world-order characterized by growth (φύσις), an embodied cosmic φρῆν whose awareness waxes and wanes (i.e. grows). In the same way, the interplay between these elements in the individual integrates his φρῆν, simultaneously effecting and affecting its growth (φύσις: fr. 16.5 Inwood):

111 FR. 14.4-8 Inwood (ἀλλ' ἄγ' ἄθρει πάσῃ παλάμῃ πῇ δῆλον ἕκαστον, μήτε τιν' ὄψιν ἔχων πιστὴν πλέον ἢ κατ' ἀκούην ἢ ἀκοὴν ἐρίδουπον ὑπὲρ τρανώματα γλώσσης, μήτε τι τῶν ἄλλων, ὅπόσῃ πόρος ἐστὶ νοῆσαι, γυίων πίστιν ἔρυκε, νόει δ' ἢ δῆλον ἕκαστον: Sext. *Adv. math.* 7.125); 68 Inwood (τῶι δ' ἐπὶ καὶ πόθος εἴσι δι' ὄψιος ἀμμίσεσθαι: Plut. *Quaest. nat.* 917e). The senses admit thought and emotion, which lead to action. See also Theophr. *De Sensu* 7-12.



TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
εἰ γὰρ καὶ [ἐν] σφ' ἀδινῆισιν ὑπὸ πραπίδεσσιν ἐρείσας / εὐμενέως καθαρῇ- σιν ἐποπτεύσεις μελέτησιν, / ταῦτά τέ σοι μάλα πάντα δι' αἰῶνος παρέσσονται, / ἄλλα τε πόλλ' ἀπὸ τῶνδε κτ<ήσε>αι· αὐτὰ γὰρ αὔξει / ταῦτ' εἰς ἧθος ἕκαστον, ὅπῃ φύσις ἐστὶν ἑκάστῳ.	For if, thrusting them deep down in your crowded thinking organs, you gaze on them in kindly fashion, with pure meditations, absolutely all these things will be with you throughout your life, and from these you will acquire many others; for these things themselves will expand to form each character, according to the growth [nature] of each.  Empedocles, fr. 16.1-5 Inwood = fr. 100 Wright = fr. B110 DK  Hippol. <i>Refut.</i> 7.29.25
ἀλλ' ἄγε μύθων κλυῖθι, μάθη γάρ τοι φρένας αὔξει·	But come! Hear my words; for learning will expand your thought organs.  Empedocles, fr. 25.14 Inwood = fr. 8 Wright = fr. B17 DK  Simpl. <i>in Phys.</i> 157.25

So the individual φρῆν is a small copy of the cosmic one, growing in a cycle that mirrors (and is included in) the love-strife cycle that creates the κόσμος. Drozdek (2007, 78) finds the most important correspondence between cosmic and personal φρένες: cosmic fire holds (or embodies) thought (φρόνησις, γνώμη)<sup>112</sup> the way the individual's blood (αἷμα) holds (or embodies) his personal thought (νόημα).<sup>113</sup> This understanding of fire

112 Fr. B110 DK: ἐνόμιζε [Empedocles] τὰ μέρη τοῦ πυρὸς τὰ <όρατὰ καὶ τὰ> ἀόρατα φρόνησιν ἔχειν καὶ γνώμην ἴσην (Hippol. *Refut.* 6.12). The authenticity of this reading is disputed. For arguments for and against it, see Drozdek (2007, 73-74, 78), who ultimately receives it as genuine. I am convinced he is correct.

113 Fr. 96 Inwood: αἷματος ἐν πελάγεσσι τεθραμμένη ἀντιθορόντος τῇ τε νόημα μάλιστα κυκλίσκεται ἀνθρώποισιν· αἷμα γὰρ ἀνθρώποις περικάρδιόν ἐστι νόημα (Stob. 1.49.53).

and blood as parallel entities justifies the central ethical standard of Empedocles, which demands punishment for bloodshed.<sup>114</sup> Just as cosmic strife interrupts the ἁρμονίη of the love-sphere, separating immortal roots and breaking the awareness of the cosmic φρῆν (because fire is separated from the other roots, unable to embody thought the same way as before) so φόνος interrupts the ἁρμονίη of the individual living being, breaking the awareness of his personal φρῆν (because his blood is separated from his body, unable to embody thought the same way as before).

Other fragments confirm the close correspondence between ethics and physics evident here. For Empedocles, the ethic of avoiding φόνος is a matter of material, physical (mis)perception:

TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
μορφὴν δ' ἀλλάξαντα πατὴρ φίλον υἱὸν αἰείρας / σφάζει ἐπευχόμενος μέγα νήπιος, οἱ δ' ἀπορεῦνται / λισσόμενον θύοντες· ὁ δ' αὖ νήκουστος ὁμοκλέων / σφάξας ἐν μεγάροισι κακὴν ἀλεγύνετο δαῖτα. / ὥς δ' αὕτως πατέρ' υἱὸς ἐλών καὶ μητέρα παῖδες / θυμὸν ἀπορραΐσαντε φίλας κατὰ σάρκας ἔδουσιν.	A father lifts up his dear son, who has changed his form, and prays and slaughters him, in great folly, and they are at a loss as they sacrifice the suppliant. But he, on the other hand, deaf to the rebukes, sacrificed him in his halls, and prepared an evil meal. In the same way, a son seizes his father and the children their mother, and tearing out their life-breath devour their own flesh.  Empedocles, fr. 128 Inwood = fr. 124 Wright = fr. B137 DK  Sext. <i>Adv. math.</i> 9.129

<sup>114</sup> See fr. 122, 124, 126 Inwood, and recall the story of the exiled δαίμονες (fr. 11.3 Inwood, discussed above on page 73).

οὐ παύσεσθε φόνοιο δυσηχέος; οὐκ ἐσορᾶτε / ἀλλήλους δάπτοντες ἀκηδείησι νόοιο;	Will you not desist from harsh-sounding bloodshed? Do you not see that you are devouring each other in the heedlessness of your understanding?  Empedocles, fr. 126 Inwood = fr. 122 Wright = fr. B136 DK  Sext. <i>Adv. math.</i> 9.119
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Ignorant of φύσις (the love-strife cycle, including the incorporation of δαίμονες), people kill family members (δαίμονες incorporated as sacrificial animals), failing to perceive what they are really doing (οἱ δ' ἀπορεῦνται ... ὁ δ' αὖ νήκουστος [fr. 128]; οὐκ ἐσορᾶτε ἀλλήλους δάπτοντες ἀκηδείησι νόοιο; [fr. 126 Inwood]). By teaching φύσις in his poetry, Empedocles enlarges the individual human φρῆν<sup>115</sup> of his auditor, amplifying its entire expression in thought, word, and action,<sup>116</sup> and facilitating right action (like the avoidance of animal sacrifice).<sup>117</sup>

In this world, physics are ethics:

115 Fr. 25.14 Inwood: μάθη γάρ τοι φρένας αὔξει (Simpl. *in Phys.* 157.25).

116 See e.g. fr. 93 Inwood: πρὸς παρεὸν γὰρ μῆτις ἀέξεται ἀνθρώποισιν (Aristot. *Metaph.* 1009b17). See also fr. 124 Inwood, where thinking devises doing (σχέτλι' ἔργα βορᾶς περὶ χεῖλεσι μητίσασθαι: Porphy. *De abst.* 2.31), and fr. 6 Inwood, where the thinking man is a master of deeds who enjoys augmented perceptual abilities (ἦν δέ τις ἐν κείνοισιν ἀνὴρ περιώσια εἰδώς, ὃς δὴ μήκιστον πραπίδων ἐκτίησατο πλοῦτον. παντοίων τε μάλιστα σοφῶν ἐπιήρανος ἔργων· ὁπότε γὰρ πάσησιν ὀρέξαιτο πραπίδεσιν, ῥεῖ' ὃ γε τῶν ὄντων πάντων λεύσσεσκεν ἕκαστον, καὶ τε δέκ' ἀνθρώπων καὶ τ' εἴκοσιν αἰώνεσσιν: Porphy. *Vita Pythagor.* 30).

117 Other actions to avoid include eating laurel leaves (fr. 129 Inwood) and beans (fr. 132 Inwood). These prohibitions link Empedocles with Pythagoras of Samos (Riedeweg [2002], 71) and ritual incubation, an important part of early Pythagoreanism (Kingsley [1995], 283-288).

TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
ἀλλὰ τὸ μὲν πάντων νόμιμον διὰ τ' εὐρυμέδοντος / αἰθέρος ἡνεκέως τέταται διὰ τ' ἀπλέτου αὐγῆς.	But what is lawful for all extends continuously through the wide-ruling aither and through the boundless gleam.  Empedocles, fr. 125 Inwood = fr. 121 Wright = fr. B135 DK  Aristot. <i>Rhet.</i> 1373b16 <sup>118</sup>

And ethics are physics:

TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
φάρμακα δ' ὅσσα γεγᾶσι κακῶν καὶ γήραος ἄλκαρ / πύσηι, ἐπεὶ μούνω σοι ἐγὼ κρανέω τάδε πάντα. / παύσεις δ' ἄκαμάτων ἀνέμων μένος οἳ τ' ἐπὶ γαῖαν / ὀρνύμενοι πνοιαῖσι καταφθινύθουσιν ἀρούρας / καὶ πάλιν, ἣν κ' ἐθέλησθα, παλίντιστα πνεύματ' ἐπάξεις / θήσεις δ' ἐξ ὄμβροιο κελαινοῦ καίριον αὐχμόν / ἀνθρώποις, θήσεις δὲ καὶ ἐξ αὐχμοῖο θερείου / ῥεύματα δένδρεόθρεπτα, τὰ τ' αἰθέρι ναιετάουσι, / ἄξεις δ' ἐξ Ἀΐδαο καταφθιμένου μένος ἀνδρός.	All the potions which there are as a defence against evils and old age, you shall learn, since for you alone will I accomplish all these things. You shall put a stop to the strength of tireless winds, which rush against the land and wither the fields with their blasts; and again, if you wish, you shall bring the winds back again; and you shall make, after dark rain, a drought timely for men, and after summer drought you shall make tree-nourishing streams which dwell in the air; and you shall bring from Hades the strength of a man who has died.  Empedocles, fr. 15 Inwood = fr. 101 Wright = fr. B111 DK  Diog. 8.59

The cosmic cycle of love and strife contains (and is reflected in) human love and strife, a correspondence that the poet-philosopher's pupil can use to perform physical miracles.<sup>119</sup>

<sup>118</sup> Aristotle confirms that this fragment seeks to equate human and natural justice.

<sup>119</sup> Note that Empedocles is credited with miraculous feats of engineering in the doxography: blocking the Etesian winds with an artificial barrier (Diog. 8.60); and removing a plague from the city of Selinus by

One more point remains to be made. Like Xenophanes,<sup>120</sup> Empedocles seems to have created a basic narrative about human institutions, laying the groundwork for an origin-and-development story for the Greek πόλις analogous to origin-and-development stories for the Greek κόσμος (including organic life) like those we have already seen:

TEXT ( <i>Inwood</i> )	TRANSLATION ( <i>Inwood</i> )
οὐδέ τις ἦν κείνοισιν Ἄρης θεὸς οὐδὲ Κυδοιμός / οὐδὲ Ζεὺς βασιλεὺς οὐδὲ Κρόνος οὐδὲ Ποσειδῶν, / ἀλλὰ Κύπρις βασιλεια ... / τὴν οἱ γ' εὐσεβέεσσιν ἀγάλμασιν ἱλάσκοντο / γραπτοῖς τε ζῳίοισι μύριοισί τε δαιδαλεόδοις / σμύρνης τ' ἀκρήτου θυσίαις λιβάνου τε θυώδους, / ξανθῶν τε σπονδὰς μελίτων ρίπτοντες ἐς οὔδας, / ... / ταύρων δ' ἀκρήτοισι φόνοις οὐ δέυετο βωμός, / ἀλλὰ μύσος τοῦτ' ἔσκεν ἐν ἀνθρώποισι μέγιστον, / θυμὸν ἀπορραΐσαντας ἐέδμεναι ἡέα γυῖα.	They had no god Ares or Battle-Din, nor Zeus the king nor Kronos nor Poseidon; but Kupris the queen [Aphrodite] ... her they worshipped with pious images, painted pictures and perfumes of various odours, and sacrifices of unmixed myrrh and fragrant frankincense, dashing onto the ground libations of yellow honey ... her altar was not wetted with the unmixed blood of bulls, but this was the greatest abomination among me, to tear out their life-breath and eat their goodly limbs.  Empedocles, fr. 122 Inwood = fr. 118 Wright = fr. B128 DK  Porphy. <i>De abst.</i> 33.18

Once upon a time, in an era less dominated by cosmic strife,<sup>121</sup> mankind observed customs different from those familiar to the Critical Tradition: they worshipped different gods (cosmic love under the name Aphrodite)<sup>122</sup> with different rituals (peaceful offerings in place of bloody sacrifices). While there is not enough here to restore anything very

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altering the course of a nearby river (Diog. 8.70). His pupil is explicitly promised one of these achievements: παύσεις δ' ἀκαμάτων ἀνέμων μένος οἱ τ' ἐπὶ γαῖαν (fr. 15.3 Inwood).

120 See the discussion of DK21B18 on page 43 above.

121 See note 90 above.

122 For the identity between Kupris here and cosmic love, see Wright (1981), 282-283.

substantial,<sup>123</sup> it is clear that Empedocles envisioned some kind of progression from (a<sub>2</sub>) the way things were under the regime of love to (b<sub>2</sub>) the way things are now under the regime of strife. This progression was definitely integrated with the larger narrative the poet-philosopher creates for the entire Greek κόσμος.

### **Anaxagoras (1.3.6)**

A contemporary of Empedocles,<sup>124</sup> Anaxagoras of Clazomenae (born c. 500; floruit 470-460) is remembered as the author of at least one book (which Simplicius refers to by the title Περὶ φύσεως; fr. B4a DK = Simpl. *in Phys.* 34.18-20).<sup>125</sup> What remains of his thought includes some familiar elements.

(1) *Cosmogony*, (2) *Zoogony*, & (3) *Anthropogony*. Like Empedocles, Anaxagoras explains all perceptual phenomena (e.g. γένεσις; fr. B10 DK) as the result of regular

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123 Wright (1981): “The passage from Porphyry occurs in an extract from Theophrastus on early sacrifices. The first libations were of water, then of honey, oil, and wine; E.’s lines are given in support. The whole is set in the early history of man: ‘When friendship and a proper sense of the duties pertaining to kindred natures was possessed by all men, no one slaughtered any living being, in consequence of thinking that other animals were allied to him [see Empedocles, fr. 123 Inwood]. But when strife and tumult (Ares and Kydoimos), every kind of contention, and the principle of war, invaded mankind, then, for the first time, no one in reality spared any one of his kindred natures’ (*abst.* 2.21, trans. T. Taylor, 1823). The connection with the *Physics* [Wright believes there were two original Empedoclean poems], reinforced by the identification of Kypris with Philia [by Theophrastus], is clear. There is here a particular description of the life of men (ἐν ἀνθρώποισι in line 9 is unambiguous) at the beginning of their generation, when Love was dominate over Strife, but now the positions are being reversed” (282).

124 Aristot. *Metaph.* 1.3.984a11, Simpl. *in Phys.* 25.19 = Anaxagoras, fr. A43, A8 DK. See also Curd (2007), 133.

125 Fr. A1, A35-40 DK. Fr. A36 (Clem. *Strom.* 1.78) records that some make Anaxagoras “the first to publish a book” (πρῶτον διὰ γραφῆς ἐκδοῦναι βιβλίον). This need not invalidate accounts of earlier writings in the Ionian tradition, which need not have circulated as freely (or in precisely the same format) as Anaxagoras’ writing, which was apparently sold to all buyers in the marketplace (fr. A35 DK = Plato, *Apol.* 26e7-d9). Note that Heraclitus’ book is supposed to have been deposited at the temple of Artemis in Ephesus for the use of elite adepts (Diog. 9.6 = DK22A1) and to have employed unusual punctuation (Aristot. *Rhet.* 3.1407b11 = DK22A4). Xenophanes, Parmenides, and Empedocles composed epic poetry, a genre with distinct conventions (including a strong emphasis on oral performance). The precise genre of Anaximander’s written work remains unclear (like its audience).

interactions between physical ἀρχαί whose essential nature remains the same over time.<sup>126</sup> However, his ἀρχαί are not as obvious or simple as the four roots. From the perspective of a human observer, Anaxagorean elements are infinite (ἄπειρα: fr. B3 DK), transcending limiting categories imposed by human perception (like size and number)<sup>127</sup> and inhering continually in every perceptible thing (rather than separating entirely from one another like the roots in the love-strife cycle that Empedocles imagines).<sup>128</sup> Anaxagoras' unique construction of the physical cycle that constitutes the universe (a cycle ubiquitous in the Critical Tradition, as we have seen) appears most clearly in the famous fragment on νοῦς:

TEXT ( <i>Curd</i> )	TRANSLATION ( <i>Curd</i> )
καὶ τῆς περιχωρήσιος τῆς συμπάσης νοῦς ἐκράτησεν, ὥστε περιχωρῆσαι τὴν ἀρχήν. καὶ πρῶτον ἀπὸ τοῦ μικροῦ ἤρξατο περιχωρεῖν, ἐπὶ δὲ πλεον περιχωρεῖ, καὶ περιχωρήσει ἐπὶ πλεον. καὶ τὰ συμμι- γόμενά τε καὶ ἀποκρινόμενα καὶ δια- κρινόμενα πάντα ἔγνω νοῦς. καὶ ὅποια ἔμελλεν ἔσεσθαι καὶ ὅποια ἦν ἄσσα νῦν μὴ ἔστι, καὶ ὅσα νῦν ἔστι καὶ ὅποια ἔσται, πάντα διεκόσμησε νοῦς, καὶ τὴν περι- χώρησιν ταύτην, ἣν νῦν περιχωρεῖ τά τε ἄστρα καὶ ὁ ἥλιος καὶ ἡ σελήνη καὶ ὁ ἀήρ καὶ ὁ αἰθήρ οἱ ἀποκρινόμενοι. ἡ δὲ περι- χώρησις αὕτῃ ἐποίησεν ἀποκρίνεσθαι. καὶ ἀποκρίνεται ἀπὸ τε τοῦ ἀραιοῦ τὸ πυκνὸν	And <i>Nous</i> controlled the whole revolution, so that it started to revolve in the beginning. First it began to revolve from a small region, but it is revolving yet more, and it will revolve still more. And <i>Nous</i> knew them all: the things that are being mixed together, the things that are being separated off, and the things that are being dissociated. And whatever sorts of things were going to be, and whatever sorts were and now are not, and as many as are now and whatever sorts will be, all these <i>Nous</i> set in order. And <i>Nous</i> also ordered this revolution, in which the things being separated off now revolve, the stars and the

126Frr. B5, B10 DK.

127 Fr. B1, B3 DK: «ὁμοῦ πάντα χρήματα ἦν, ἄπειρα καὶ πληθος καὶ μικρότητα» (Simpl. in Phys. 155.23, 164.14-22).

128 Fr. B6 DK: καὶ ὅτε δὲ ἴσαι μοῖραί εἰσι τοῦ τε μεγάλου καὶ τοῦ μικροῦ πληθος, καὶ οὕτως ἂν εἴη ἐν παντὶ πάντα: οὐδὲ χωρὶς ἔστιν εἶναι, ἀλλὰ πάντα παντὸς μοῖραν μετέχει. ὅτε τοῦλάχιστον μὴ ἔστιν εἶναι, οὐκ ἂν δύναίτο χωρισθῆναι, οὐδ' ἂν ἐφ' ἑαυτοῦ γενέσθαι, ἀλλ' ὅπως ἀρχὴν εἶναι καὶ νῦν πάντα ὁμοῦ. ἐν πᾶσι δὲ πολλὰ ἔνεστι καὶ τῶν ἀποκρινομένων ἴσα πληθος ἐν τοῖς μείζοσι τε καὶ ἐλάσσοσι (Simpl. in Phys. 164.25).

καὶ ἀπὸ τοῦ ψυχροῦ τὸ θερμὸν καὶ ἀπὸ τοῦ ζοφεροῦ τὸ λαμπρὸν καὶ ἀπὸ τοῦ διεροῦ τὸ ξηρόν. μοῖραι δὲ πολλαὶ πολλῶν εἰσι. παντάπασι δὲ οὐδὲν ἀποκρίνεται οὐδὲ διακρίνεται ἕτερον ἀπὸ τοῦ ἑτέρου πλήν νοῦ.	sun and the moon and the air and the aether. This revolution caused them to separate off. The dense is being separated off from the rare, the warm from the cold, and the bright from the dark, and the dry from the moist. But there are many shares of many things; nothing is completely separated off or dissociated one from the other except <i>Nous</i> .  Anaxagoras, fr. B12 DK Simpl. <i>in Phys.</i> 156.13
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According to Anaxagoras, the Greek world-order owes its existence to a continuous revolution (περιχώρησις) that began in the past (πρῶτον ἀπὸ τοῦ σμικροῦ ἤρξατο περιχωρεῖν),<sup>129</sup> continues in the present (ἐπὶ δὲ πλέον περιχωρεῖ), and will go on indefinitely into the future (καὶ περιχωρήσει ἐπὶ πλέον). This revolution constantly mixes things (τὰ συμμισγόμενα), separates them from one another (ἀποκρινόμενα), and breaks them down (διακρινόμενα).<sup>130</sup> Each thing is a compound containing every kind of element (παντάπασι δὲ οὐδὲν ἀποκρίνεται) in different proportions. As the proportions of different elements in a thing change, so do its perceptible physical characteristics (e.g. density, temperature, brightness, wetness). Thus warm things contain more “warm stuff” than cold things, and bright things contain more “bright stuff” than dark things, etc., but nothing is entirely without warm or bright stuff (the elements warm and bright). The

129 For more about the beginning of Anaxagoras' περιχώρησις, see fr. B4b DK (quoted below on page 87), which discusses the initial wholeness composed of all material stuff before things began to separate (ἀποκρίνεσθαι).

130 See fr. B17 DK (τὸ δὲ γίνεσθαι καὶ ἀπόλλυσθαι οὐκ ὀρθῶς νομίζουσιν οἱ Ἕλληνες· οὐδὲν γὰρ χρῆμα γίνεται οὐδὲ ἀπόλλυται, ἀλλ' ἀπὸ ἐόντων χρημάτων συμμίσγεται τε καὶ διακρίνεται. καὶ οὕτως ἂν ὀρθῶς καλοῖεν τό τε γίνεσθαι συμμίσεσθαι καὶ τὸ ἀπόλλυσθαι διακρίνεσθαι: Simpl. *in Phys.* 163.18) and fr. B10 DK, where the human body grows from the dissociation (διάκρισις, διακρίνεσθαι) of different physical elements in the semen.



driving force behind the revolution is a cosmic mind that knows all things (πάντα ἔγνω νοῦς) and orders them (πάντα διεκόσμησε νοῦς)<sup>131</sup>—including things past (and perished), present, and future (καὶ ὅποια ἔμελλον ἔσεσθαι καὶ ὅποια ἦν ἄσσα νῦν μὴ ἔστι, καὶ ὅσα νῦν ἔστι καὶ ὅποια ἔσται). This mind is separate (οὐδὲ διακρίνεται ἕτερον ἀπὸ τοῦ ἑτέρου πλὴν νοῦ) from the other physical stuff in the universe that cannot be broken down into pure categories (like Empedocles' roots).<sup>132</sup> Thus, instead of being an emergent property of ἀρχαί (like the Empedoclean sacred φρῆν), Anaxagoras' νοῦς is itself an ἀρχή: a material principle (λεπτότατον πάντων χρημάτων: fr. B12 DK) which initiates and controls the process (περιχώρησις) that makes things seem to come into existence and pass away, constituting the familiar Greek κόσμος.<sup>133</sup>

Another essential part of Anaxagoras' cosmology (in addition to the ἀρχαί and the περιχώρησις) is the incorporation of parallel world-orders existing contemporary but (most likely)<sup>134</sup> non-contiguous with the Greek κόσμος.<sup>135</sup> As it happens, one of the

131 See also fr. B13 DK, which makes νοῦς the original source of universal motion (and an ἀρχή): Ἀναξαγόρου δέ, φησὶν Ἀλέξανδρος, οὐκ ἐμνημόνευσε [Aristotle] καίτοι τὸν νοῦν ἐν ταῖς ἀρχαῖς τιθέντος, ἴσως, φησὶν, ὅτι μὴ προσχρῆται αὐτῷ ἐν τῇ γενέσει. ἀλλ' ὅτι μὲν προσχρῆται, δῆλον, εἴπερ τὴν γένεσιν οὐδὲν ἄλλο ἢ ἔκκρισιν εἶναι φησι, τὴν δὲ ἔκκρισιν ὑπὸ τῆς κινήσεως γίνεσθαι, τῆς δὲ κινήσεως αἴτιον εἶναι τὸν νοῦν. λέγει γὰρ οὕτως Ἀναξαγόρας· καὶ ἐπεὶ ἤρξατο ὁ νοῦς κινεῖν, ἀπὸ τοῦ κινουμένου παντὸς ἀπεκρίνετο, καὶ ὅσον ἐκίνησεν ὁ νοῦς, πᾶν τοῦτο διεκρίθη· κινουμένων δὲ καὶ διακρινομένων ἢ περιχώρησις πολλῶι μᾶλλον ἐποίει διακρίνεσθαι (Simpl. in Phys. 300.27).

132 Though mind does apparently associate (and in some way, inhere in) with physical matter: λέγει δὲ σαφῶς, ὅτι ἐν παντὶ παντὸς μοῖρα ἔνεστι πλὴν νοῦ, ἔστιν οἷσι δὲ καὶ νοῦς ἐνι (B11 DK = Simpl. in Phys. 164.22).

133 For doxographical confirmation that Anaxagoras explained the origin of natural phenomena, see fr. A42 (= Hippol. Refut. 1.8.1, recounting the origin of the heavenly bodies, the earth, seas and rivers, winds, thunder and lightening, and animal life) and A71 DK (= Aet. 2.13.3, recounting the origin of the stars). See also Curd (2007), 206-225; Naddaf (2005), 148-149.

134 Following Curd's (2007, 213-216) rejection of the theory of microscopic worlds defended by Leon, Strang, Mansfeld, and Schofield. Note the difference between world-orders that exist separately at the same time (thus Anaxagoras) and endless iterations of the same world-order (such as Heraclitus, Empedocles, and possibly Anaximander seem to have imagined: see note 24 above).

135 Fr. B4a DK (see the following section on zoogony and anthropogony). For more thorough discussion,

fragments upon which this datum depends also includes our only Anaxagorean quote on the origins of animal and human life:

TEXT ( <i>Curd</i> )	TRANSLATION ( <i>Curd</i> )
<p>πρὶν δὲ ἀποκριθῆναι [ταῦτα] πάντων ὁμοῦ ἔόντων οὐδὲ χροὴ ἔνδηλος ἦν οὐδεμία· ἀπεκώλυε γὰρ ἡ σύμμιξις πάντων χρημάτων, τοῦ τε διεροῦ καὶ τοῦ ξηροῦ καὶ τοῦ θερμοῦ καὶ τοῦ ψυχροῦ καὶ τοῦ λαμπροῦ καὶ τοῦ ζοφεροῦ, καὶ γῆς πολλῆς ἐνεούσης καὶ σπερμάτων ἀπείρων πληθος οὐδὲν ἑοικότες ἀλλήλοις. οὐδὲ γὰρ τῶν ἄλλων οὐδὲν ἔοικε τὸ ἕτερον τῷ ἑτέρῳ. τούτων δὲ οὕτως ἐχόντων ἐν τῷ σύμπαντι χρὴ δοκεῖν ἐνεῖναι πάντα χρήματα.</p>	<p>Before there was separation off, because all things were together, there was not even any colour evident; for the mixture of all things prevented it, of the wet and the dry and of the hot and the cold and of the bright and the dark, and there was much earth present and seeds unlimited in number, in no way similar to one another. For no one of the others is similar to another. Since these things are so, it is right to think that all things were present in the whole.</p> <p>Anaxagoras, fr. B4b DK Simpl. <i>in Phys.</i> 34.20-27</p>
<p>τούτων δὲ οὕτως ἐχόντων χρὴ δοκεῖν ἐνεῖναι πολλά τε καὶ παντοῖα ἐν πᾶσι τοῖς συγκρινομένοις καὶ σπέρματα πάντων χρημάτων καὶ ἰδέας παντοίας ἔχοντα καὶ χροιάς καὶ ἡδονάς. καὶ ἀνθρώπους τε συμπαγῆναι καὶ τὰ ἄλλα ζῶια ὅσα ψυχὴν ἔχει. καὶ τοῖς γε ἀνθρώποισιν εἶναι καὶ πόλεις συνημμένας καὶ ἔργα κατεσκευασμένα, ὥσπερ παρ' ἡμῖν, καὶ ἡέλιόν τε αὐτοῖσιν εἶναι καὶ σελήνην καὶ τὰ ἄλλα, ὥσπερ παρ' ἡμῖν, καὶ τὴν γῆν αὐτοῖσι φύειν πολλά τε καὶ παντοῖα, ὧν ἐκεῖνοι τὰ ὀνήιστα συνενεγκάμενοι εἰς τὴν οἴκησιν χρῶνται. ταῦτα μὲν οὖν μοι λέλεκται περὶ τῆς ἀποκρίσεως, ὅτι οὐκ ἂν παρ' ἡμῖν μόνον ἀποκριθείη, ἀλλὰ καὶ ἄλλῃ.</p>	<p>Since these things are so, it is right to think that there are many different things present in everything that is being combined, seeds of all things, having all sorts of forms, colours, and flavours, and that humans and also the other animals were compounded, as many as have soul. Also, that there are cities that have been constructed by humans and works made, just as with us, and that there are a sun and a moon and other heavenly bodies for them, just as with us, and the earth grows many different things for them, the most valuable of which they gather together into their household and use. I have said this about separation off, because there would be separation off not only for us but also elsewhere.</p> <p>Anaxagoras, fr. B4a DK Simpl. <i>in Phys.</i> 34.18-20, 27</p>

see Curd (2007), 212-222.

The latest reading of these fragments runs as follows.<sup>136</sup> First, before the περιχώρησις begins, all material stuff (with the possible exception of νοῦς) is gathered in one whole (reminiscent of the Empedoclean love-sphere, but seemingly less seamlessly integrated: see fr. B4b DK above, with its mention of various things in the primeval whole) which contains seeds of later things. After cosmic νοῦς initiates the περιχώρησις, stuff scatters (including the seeds of everything), forming multiple κόσμοι like the one familiar to the Critical Tradition. Like the Greek κόσμος (ὥσπερ παρ' ἡμῖν), these too possess sun, moon, stars, etc., as well as earth, plant life (τὴν γῆν αὐτοῖσι φύειν πολλά τε καὶ παντοῖα), animals, and humans (which, like animals, have ψυχή).

This fragment does not offer many details about the origins of life: all we get is the verb συμπαγῆναι used to describe how humans and animals are brought together from material stuff. The doxographers provide a slightly more detailed account of how Anaxagoras imagined life evolving with the progression of the περιχώρησις. After the earth coalesces (fr. B16 DK) and there is water on it (fr. A42 DK = Hippol. *Refut.* 1.8.1), the first animals are born directly from it, only later making use of sexual reproduction (ζῶια γίνεσθαι ἐξ ὑγροῦ καὶ θερμοῦ καὶ γεώδους, ὕστερον δὲ ἐξ ἀλλήλων: Diog. 2.9 = fr. A1 DK; ζῶια δὲ τὴν μὲν ἀρχὴν ἐν ὑγρῷ γενέσθαι, μετὰ ταῦτα δὲ ἐξ ἀλλήλων: Hippol. *Refut.* 1.8.1 = fr. A42 DK). This account recalls Anaximander's ancestral animals (fish-like creatures emerging from the sea in thorny bark)<sup>137</sup> as well as the asexual ancestral

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<sup>136</sup> See note 134 above: I am following Curd.

<sup>137</sup> See note 31 above.

life-forms of Empedocles (see pages 70-72 above).<sup>138</sup>

(4) *Ethics*. We have already seen that Anaxagoras explicitly includes the πόλις, human ἔργα, and the οἴκησις in his vision of the κόσμοι integrated (συμπαγῆναι) by the περιχώρησις (fr. B4a DK, quoted on page 87 above). From his perspective, these things constitute physical realities like the biological and celestial phenomena that he mentions in the same breath with them: καὶ τοῖς γε ἀνθρώποισιν εἶναι καὶ πόλεις συνημμένας καὶ ἔργα κατεσκευασμένα, ὥσπερ παρ' ἡμῖν, καὶ ἡέλιόν τε αὐτοῖσιν εἶναι καὶ σελήνην καὶ τὰ ἄλλα (fr. B4a DK). He identifies the οἴκησις as the place to which all people (including those in other κόσμοι) bring the most useful things that their earth produces (τὴν γῆν αὐτοῖσι φύειν πολλά τε καὶ παντοῖα, ὧν ἐκεῖνοι τὰ ὀνήιστα συνενεγκάμενοι εἰς τὴν οἴκησιν χρῶνται: fr. B4a DK), showing some idea of a universal human life (and character) consistent across different world-orders. Elsewhere, there are tantalizing hints of more developed insights into this life (and character):

TEXT (DK, Babbitt)	TRANSLATION (Curd)
ἀλλ' ἐν πᾶσι τούτοις ἀτυχέστεροι τῶν θηρίων ἐσμέν, ἐμπειρία δὲ καὶ μνήμη καὶ σοφαίαι καὶ τέχνηι κατὰ Ἀναξαγόραν ἢ σφῶν τε αὐτῶν χρώμεθα καὶ βλίττομεν καὶ ἀμέλγομεν καὶ φέρομεν καὶ ἄγομεν συλλαμβάνοντες· ὥστ' ἐνταῦθα μηδὲν τῆς τύχης ἀλλὰ πάντα τῆς εὐβουλίας εἶναι καὶ	In all these [physical skills that animals possess] we are more unfortunate than the beasts, but by experience and memory and wisdom and art according to Anaxagoras, we make use of their activity [?] and take their honey and milk them and herding them together, use them at will. There is

138 For more on the Anaxagorean story of biological evolution, see Naddaf (2005, 149), who notes the similarity between the theory of universal seeds in the primordial whole (fr. B4b DK) and Anaxagoras' account of plant germination as summarized by Theophrastus: Ἀναξαγόρας τὸν ἀέρα πάντων φάσκων ἔχειν σπέρματα καὶ ταῦτα συγκαταφερόμενα τῷ ὕδατι γεννᾶν τὰ φυτὰ (*H. pl.* 3.1.4 = fr. A117 DK). The original Anaxagorean animals seem to sprout from the moist earth (enriched with seeds from the primordial whole?) in the manner of plants, which grow from air-born seeds when these are brought down (to earth?) with water.

τῆς προνοίας.	nothing of chance here, but all is wisdom and forethought.  Anaxagoras, fr. B21b DK  Plut. <i>De fort.</i> 3.98f
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Recall that Anaxagoras' portrait of biological life begins with a likeness between humans and animals; both are physical compounds endowed with ψυχή (καὶ ἀνθρώπους τε συμπαγῆναι καὶ τὰ ἄλλα ζῶια ὅσα ψυχὴν ἔχει: fr. B4a DK). This fragment discusses how they are different, locating that difference in humanity's unique access to the noetic qualities of experience (ἐμπειρία), memory (μνήμη), wisdom (σοφία), and art (τέχνη). With these qualities, human beings control animals (χρώμεθα καὶ βλίττομεν καὶ ἀμέλγομεν καὶ φέρομεν καὶ ἄγομεν συλλαμβάνοντες) the way cosmic mind controls the universe: γνώμην γε περὶ παντὸς πᾶσαν ἴσχει καὶ ἰσχύει μέγιστον [νοῦς]. καὶ ὅσα γε ψυχὴν ἔχει καὶ τὰ μείζω καὶ τὰ ἐλάσσω, πάντων νοῦς κρατεῖ ... πάντα διεκόσμησε νοῦς (fr. B12 DK = Simpl. *in Phys.* 156.13). Man uses his limited noetic qualities to dominate animals purposefully, and cosmic mind uses its universal γνώμη to arrange all things purposefully. Luck (the random, unforeseen event) becomes a human (mis)perception, something that we see only because we do not have access to cosmic mind (ὥστ' ἐνταῦθα μηδὲν τῆς τύχης ἀλλὰ πάντα τῆς εὐβουλίας εἶναι καὶ τῆς προνοίας). This insight will be important later.

Given the importance Anaxagoras allots to cosmic mind (as the driving force behind all physical reality), it is no surprise to find him emphasizing the importance of

human mind (and thought).<sup>139</sup> A number of testimonia show Anaxagoras making thought (a) the central purpose of human life (fr. A29-30 DK) and (b) an effective means for dealing with the vicissitudes of human life (fr. A28, A33 DK):

TEXT (DK)	TRANSLATION (Curd)
(a <sub>1</sub> ) τὸν μὲν οὖν Ἀναξαγόραν φασὶν ἀποκρίνασθαι πρὸς τινὰ διαποροῦντα τοιαῦτ' ἅττα καὶ διερωτῶντα, τίνος ἕνεκ' ἂν τις ἔλοιτο γενέσθαι μᾶλλον ἢ μὴ γενέσθαι, «τοῦ» φάναι «θεωρῆσαι τὸν οὐρανὸν καὶ τὴν περὶ τὸν ὅλον κόσμον τάξιν.»	They report that someone was raising difficulties about this sort of thing and quizzing Anaxagoras about why someone should choose to be born rather than not. Anaxagoras replied, “For the sake of contemplating the heavens and the whole of the universe.”  Anaxagoras, fr. A30 DK  Aristot. <i>Eth. Eud.</i> 1.4.1215b6
(a <sub>2</sub> ) Ἀναξαγόραν μὲν γὰρ τὸν Κλαζομένιον τὴν θεωρίαν φάναι τοῦ βίου τέλος εἶναι καὶ τὴν ἀπὸ ταύτης ἐλευθερίαν λέγουσιν.	Anaxagoras of Clazomenae, they say, claimed that the goal ( <i>telos</i> ) of life is contemplation and the freedom it brings.  Anaxagoras, fr. A29 DK  Clem. <i>Strom.</i> 2.130
(b <sub>1</sub> ) Ἀναξαγόρου δὲ καὶ ἀπόφθεγμα μνημονεύεται πρὸς τῶν ἐταίρων τινάς, ὅτι τοιαῦτ' αὐτοῖς ἔσται τὰ ὄντα οἷα ἂν ὑπολάβωσιν.	A saying of Anaxagoras to some of his friends is also recorded, that things will be for them such as they suppose them to be.  Anaxagoras, fr. A28 DK  Aristot. <i>Metaph.</i> 4.5.1009b25

<sup>139</sup> For alternative readings of the Clazomenian that come to this same general conclusion, see Drozdek (2007), 91-93; Naddaf (2005), 149-152.

<p>(b<sub>2</sub>) διὸ καὶ «προενδημεῖν» φησι τοῖς πράγμασι μήπω τε παροῦσιν οἷον παροῦσι χρῆσθαι. βούλεται δὲ τὸ «προενδημεῖν» ῥῆμα τῷ Ποσειδωνίῳ τὸ οἷον προανα-πλάττειν τε καὶ προτυποῦν τὸ πρᾶγμα παρὰ ἑαυτῷ τὸ μέλλον γενήσεσθαι καὶ ὡς πρὸς ἤδη γενόμενον ἔθισμόν τινα ποιεῖσθαι κατὰ βραχύ. διὸ καὶ τὸ τοῦ Ἀναξαγόρου παρείληφεν ἐνταῦθα, ὡς ἄρα τινὸς ἀναγγεῖλαντος αὐτῷ τεθνάναι τὸν υἱὸν εὖ μάλα καθεστηκότως εἶπεν «ἤιδειν θνητὸν γεννήσας» καὶ ὡς τοῦτο λαβὼν Εὐριπίδης τὸ νόημα τὸν Θησέα πεποίηκε λέγοντα· «ἐγὼ δὲ παρὰ σοφοῦ τινος μαθὼν / εἰς φροντίδ' αἰεὶ συμφορὰς ἐβαλλόμην / φυγὰς τ' ἐμαυτῷ προστιθεὶς πάτρας ἐμῆς / θανάτους τ' ἄωρους καὶ κακῶν ἄλλας ὁδούς, / ἴν', εἴ τι πάσχοιμι' ὧν ἐδόξαζον φρενί, / μή μοι νεώρες προσπεσὸν μᾶλλον δάκοι.»</p>	<p>For this reason [Posidonius] says <i>to familiarize</i> oneself with things before they occur and experience them as though they were present. For Posidonius the word <i>to familiarize</i> means something like to resolve to anticipate or to conceive for oneself beforehand what is about to happen and so to have already become habituated to make little of it. And that is why he has adopted here the saying of Anaxagoras, who, when someone announced the death of his son to him, said very calmly, “I knew I begat a mortal,” just as Euripides took the thought for himself, and made Theseus say (fr. 964), “Having learned from some wise man, / I always put fitting thoughts in my mind / anticipating to myself banishment from my country, / untimely deaths, and other sorts of evil, / so if something should befall that I have conceived in my heart, / what befalls would no longer sting me as something new.”</p> <p>Anaxagoras, fr. A33 DK</p> <p>Galen, <i>De Hipp. et Plat. dogm.</i> 4.7</p>
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The related ideas holding these four testimonia together (assuming for the moment that they are genuine) are (a) that thought is the highest expression of humanity<sup>140</sup> and (b) that

<sup>140</sup> Here it is worth noting the difficulty that Aristotle has in distinguishing between νοῦς and ψυχή (the life-force of animals and humans) as conceived by Anaxagoras (*De anima* 1.2.404b1, 405a13, 405b19, 3.4.429a18 = fr. A100 DK), a difficulty that Philoponus (*in De anima* 72.9-10) resolves “by saying that Anaxagoras distinguished Mind and soul at the stage of creating the cosmos, after which Mind and soul are identified” (Drozdek [2007], 91) such that “Mind is God in all of us” (ὁ νοῦς γὰρ ἡμῶν ἐστὶν ἐν ἐκάστωι θεός; Eur. fr. 1018 = Anaxagoras, fr. A48 DK, with various other testimonia confirming that νοῦς is the only god recognized by Anaxagoras). The upshot of this seems to be that the cosmic mind communicates with other minds (including human minds) somehow, guiding them to do in part what it does for the whole and so using them to create an order greater than they can conceive on their own. See Drozdek (2007), 91-92, and Naddaf (2005), 150-151, who summarizes thus: “Anaxagoras states that if cosmic *nous* were mixed with other things it would not be able to rule things with the same consistency (DK59B12.4). Since humans are composed of mind and matter they constitute a mixture. Consequently, humans are not omniscient, autonomous, and free from mistakes” (151).

thinking can enable a person to exercise a degree of control over his life (ὅτι τοιαῦτ' αὐτοῖς ἔσται τὰ ὄντα οἷα ἂν ὑπολάβωσιν), specifically to suffer (inevitable) trials (like the death of loved ones) well, i.e. “very calmly” (μάλα καθεστηκότως) through a kind of pre-visualization (Posidonian προενδημεῖν, Anaxagoras' ἥιδειν, and Euripides' εἰς φροντίδ' ἀεὶ συμφορὰς ἐβαλλόμεν ... προστιθείς).<sup>141</sup> It is not clear how much Euripides may have added to the original idea taken from Anaxagoras (assuming Galen had good reason for identifying him as the σόφος alluded to in fr. 964), or how much of Posidonius' construction depends on later insights, but it is undoubtedly significant that Anaxagoras is associated here with a constructive approach to human suffering that is dependent on a perceptive, controlling νοῦς. This is interesting for two reasons.

In the first place, there are striking similarities between the Anaxagorean approach to suffering as outlined here and the Democritean approach to happiness (εὐθυμία), similarities which will occupy us later. For now it is enough to notice that, as far as we can tell, Anaxagorean ethics are entirely congruent with Anaxagorean physics. The simplest explanation for this congruence is that Anaxagoras viewed ethics as an extension of physics, much like all of the other authors examined thus far. The νοῦς that gave order (διεκόσμησε: fr. B12 DK) to all things (with the inclusion of πόλεις συνημμένας, ἔργα κατεσκευασμένα, and the οἴκησις: fr. B4a DK) also arranged the smaller order of the human mind, with its noetic qualities (ἐμπειρία, μνήμη, σοφία, τέχνη: fr. B21b DK) that facilitate gathering the most useful products of the earth to the household (fr. B4a DK),

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<sup>141</sup> Remember the εὐβουλία and πρόνοια that characterize cosmic and human mind (with its ἐμπειρία, μνήμη, σοφία, τέχνη) in fr. B21b DK (quoted above on page 90).



controlling lesser animals (fr. B21b DK), and (at least potentially) dealing with inevitable human suffering (fr. A28, A33 DK).

### **Philolaus (1.3.7)**

A contemporary of Democritus, Philolaus (c. 470-c. 380s) is included here as one of the earliest authors<sup>142</sup> extant in the Critical Tradition with some claim to preserve ideas deriving from Pythagoras of Samos (c. 570-c. 480).<sup>143</sup> Diogenes Laertius credits him alternately with one book (Diog. 3.9, 8.85) or three (Diog. 3.9, 8.15), with a detailed reading of the evidence favoring the former scenario (the latter being a myth invented to lend authenticity to a Pythagorean trilogy composed in the third century).<sup>144</sup> The single book is referred to by the familiar title *Περὶ φύσεως* (Diog. 8.85). A few other titles are referenced in the doxography (*Περὶ κόσμου*, *Περὶ ψυχῆς*, *Περὶ ῥυθμῶν καὶ μέτρων*, *Βάκχαι*), with the *Βάκχαι* showing the most promise of being genuine.<sup>145</sup> What we find in the extant fragments of Philolaus is familiar.

(1) *Cosmogony*, (2) *Zoogony*, & (3) *Anthropogony*. As recognized by Philolaus, φύσις is composed of two different kinds of material, the limiting and the unlimited

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142 The others are Xenophanes, Heraclitus, and Empedocles. Xenophanes (DK21B7) and Heraclitus (fr. 16-17 Marcovich) attack Pythagoras as a charlatan, ridiculing the Pythagorean idea of μετεμψύχωσις (Xenophanes) and criticizing his approach to ἱστορίη (Heraclitus). Empedocles incorporates Pythagorean μετεμψύχωσις into his work, along with ritual prohibitions consonant with what we know about the Pythagorean life. See Riedeweg (2002), 48-52, and note 117 above.

143 Huffman (1993), 14-16; Burkert (1972), 223-229.

144 Huffman (1993), 12-14.

145 Kingsley (1995), 262-264; Huffman (1993), 16, 417-418. Stobaeus cites a fragment that appears to be genuine from this title (1.15.7 = fr. 17 DK), and Proclus (*in Eucl.* 22.9) reports that it taught secret doctrine about the gods using mathematics: διὸ καὶ ὁ Πλάτων πολλὰ καὶ θαυμαστὰ δόγματα περὶ θεῶν διὰ τῶν μαθηματικῶν εἰδῶν ἡμᾶς ἀναδιδάσκει καὶ ἡ τῶν Πυθαγορείων φιλοσοφία παραπετάσματος τοῦτοις χρωμένη τὴν μυσταγωγίαν κατακρύπτει τῶν θεῶν δογμάτων. τοιοῦτος γὰρ καὶ ὁ Ἱερὸς σύμπαρ λόγος καὶ ὁ Φιλόλαος ἐν ταῖς Βάκχαις καὶ ὅλος ὁ τρόπος τῆς Πυθαγόρου περὶ θεῶν ὑψηλῆς φύσεως (fr. B19 DK).

(functional equivalents of Anaxagorean stuff, Empedoclean roots, Parmenidean light and dark, Heraclitean fire in its various forms, Xenophanean earth in its various forms, and the material opposites produced by Anaximander's ἄπειρον):

TEXT ( <i>Huffman</i> )	TRANSLATION ( <i>Huffman</i> )
ἀ φύσις δ' ἐν τῷ κόσμῳ ἀρμόχθη ἐξ ἀπείρων τε καὶ περαινόντων καὶ ὅλος <ὁ> κόσμος καὶ τὰ ἐν αὐτῷ πάντα.	Nature in the world-order was fitted together both out of things which are unlimited and out of things which are limiting, both the world-order as a whole and all the things in it.  Philolaus, fr. B1 DK = Diog. 8.85
ἀνάγκα τὰ ἔόντα εἶμεν πάντα ἢ περαίνοντα ἢ ἄπειρα ἢ περαίνοντά τε καὶ ἄπειρα· ἄπειρα δὲ μόνον οὐκ αἰεί. ἐπεὶ τοῖνυν φαίνεται οὕτ' ἐκ περαινόντων πάντων ἔόντα οὕτ' ἐξ ἀπείρων πάντων, δῆλον τᾶρα ὅτι ἐκ περαινόντων τε καὶ ἀπείρων ὃ τε κόσμος καὶ τὰ ἐν αὐτῷ συναρμόχθη. δηλοῖ δὲ καὶ τὰ ἐν τοῖς ἔργοις. τὰ μὲν γὰρ αὐτῶν ἐκ περαινόντων περαίνοντι, τὰ δ' ἐκ περαινόντων τε καὶ ἀπείρων περαίνοντί τε καὶ οὐ περαίνοντι, τὰ δ' ἐξ ἀπείρων ἄπειρα φανέονται.	It is necessary that the things that are be all either limiting, or unlimited, or both limiting and unlimited but not in every case unlimited alone. Well then, since it is manifest that they are neither from limiting things alone, nor from unlimited things alone, it is clear then that the world-order and the things in it were fitted together from both limiting and unlimited things. Things in their actions also make this clear. For, some of them from limiting (constituents) limit, others from both limiting and unlimited (constituents) both limit and do not limit, others from unlimited (constituents) will be manifestly unlimited.  Philolaus, fr. B2 DK = Stob. 1.21.7a

Limited and unlimited material elements relate to one another harmoniously (ἀρμόχθη: fr. B1; συναρμόχθη: fr. B2) in the world-order as a whole (ὅλος <ὁ> κόσμος: fr. B1; ὃ τε κόσμος: fr. B2) and in the individual things in it (καὶ τὰ ἐν αὐτῷ πάντα: fr. B1; καὶ τὰ ἐν αὐτῷ: fr. B2). In fact, harmony (ἀρμονία) is the engine that sets Philolaus' world-order

in order (like Anaxagorean mind):<sup>146</sup>

TEXT ( <i>Huffman</i> )	TRANSLATION ( <i>Huffman</i> )
<p>περὶ δὲ φύσιος καὶ ἀρμονίας ὧδε ἔχει· ἃ μὲν ἔστω τῶν πραγμάτων αἴδιος ἔσσα καὶ αὐτὰ μὰν ἃ φύσις θείαν τε καὶ οὐκ ἀνθρωπίνην ἐνδέχεται γινῶσιν πλάν γὰρ ἢ ὅτι οὐχ οἷόν τ' ἦν οὐθενὶ τῶν ἐόντων καὶ γιγνωσκομένων ὑφ' ἁμῶν γεγενῆσθαι μὴ ὑπαρχούσας τὰς ἐστοῦς τῶν πραγμάτων, ἐξ ὧν συνέστα ὁ κόσμος, καὶ τῶν περαινόντων καὶ τῶν ἀπείρων. ἐπεὶ δὲ ταὶ ἀρχαὶ ὑπάρχον οὐχ ὁμοῖαι οὐδ' ὁμόφυλοι ἔссαι, ἤδη ἀδύνατον ἦς κα αὐταῖς κοσμηθῆναι, εἰ μὴ ἀρμονία ἐπεγένετο ὠτινιῶν ἂν τρόπῳ ἐγένετο. τὰ μὲν ὧν ὁμοῖα καὶ ὁμόφυλα ἀρμονίας οὐδὲν ἐπεδέοντο, τὰ δὲ ἀνόμοια μὴδὲ ὁμόφυλα μὴδὲ † ἰσοταχῇ, ἀνάγκα τὰ τοιαῦτα ἀρμονίαι συγκεκλεῖσθαι, εἰ μέλλοντι ἐν κόσμῳ κατέχεσθαι.</p>	<p>Concerning nature and harmony the situation is this: the being of things, which is eternal, and nature in itself admit of divine and not human knowledge, except that it was impossible for any of the things that are and are known by us to have come to be, if the being of the things from which the world-order came together, both the limiting things and the unlimited things, did not preexist. But since these beginnings preexisted and were neither alike nor even related, it would have been impossible for them to be ordered, if a harmony had not come upon them, in whatever way it came to be. Like things and related things did not in addition require any harmony, but things that are unlike and not even related nor of [? the same speed], it is necessary that such things be bonded together by harmony, if they are going to be held in an order.</p> <p>Philolaus, fr. B6 DK</p> <p>Stob. 1.21.7d</p>

Harmony comes upon (ἐπεγένετο) the physical elements (limiting and unlimited) in a way that escapes human apprehension (but not divine: θείαν τε καὶ οὐκ ἀνθρωπίνην ἐνδέχεται γινῶσιν), binding disparate things together (τὰ δὲ ἀνόμοια μὴδὲ ὁμόφυλα μὴδὲ † ἰσοταχῇ, ἀνάγκα τὰ τοιαῦτα ἀρμονίαι συγκεκλεῖσθαι) and forming the order (κόσμος) familiar to the Critical Tradition.

<sup>146</sup> See also the references to ἀρμονίη in Heraclitus (fr. 9 Marcovich: ἀρμονίη ἀφανὴς φανερῆς κρείττων [Hippol. *Refut.* 9.9.5]) and Empedocles (page 75 above).

Like other authors in the Critical Tradition, Philolaus conceived that order as developing regularly from a beginning. His story was one of origin and development:

TEXT ( <i>Huffman</i> )	TRANSLATION ( <i>Huffman</i> )
τὸ πρᾶτον ἄρμοσθέν, τὸ ἐν ἐν τῷ μέσῳ τᾶς σφαίρας, ἐστία καλεῖται.	The first thing fitted together, the one in the center of the sphere, is called the hearth.  Philolaus, fr. B7 DK  Stob. 1.21.8
ὁ κόσμος εἷς ἐστιν, ἥρξατο δὲ γίγνεσθαι ἄχρι τοῦ μέσου καὶ ἀπὸ τοῦ μέσου εἰς τὸ ἄνω διὰ τῶν αὐτῶν τοῖς κάτω, <καὶ> ἔστι τὰ ἄνω τοῦ μέσου ὑπεναντίως κείμενα τοῖς κάτω. τοῖς γὰρ κάτω τὸ κατωτάτῳ μέρος ἐστὶν ὥσπερ τὸ ἀνωτάτῳ καὶ τὰ ἄλλα ὡσαύτως. πρὸς γὰρ τὸ μέσον κατὰ ταῦτά ἐστιν ἐκάτερα, ὅσα μὴ μετενήνεκται.	The world-order is one. It began to come to be right up at the middle and from the middle <came to be> upwards in the same way as downwards and the things above the middle are symmetrical with those below. For, in the lower <regions> the lowest part <for the upper regions> is like the highest and similarly with the rest. For both <the higher and the lower> have the same relationship to the middle, except that their positions are reversed.  Philolaus, fr. B17 DK  Stob. 1.15.7

Harmony first makes the central hearth (τὸ ἐν ἐν τῷ μέσῳ ... ἐστία καλεῖται: fr. B7), the point of origin for the rest of the κόσμος (ἥρξατο δὲ γίγνεσθαι ἄχρι τοῦ μέσου καὶ ἀπὸ τοῦ μέσου εἰς τὸ ἄνω διὰ τῶν αὐτῶν τοῖς κάτω: fr. B17), which forms symmetrically (ἔστι τὰ ἄνω τοῦ μέσου ὑπεναντίως κείμενα τοῖς κάτω: fr. B17) in a sphere around it (ἐν τῷ μέσῳ τᾶς σφαίρας: fr. B7; πρὸς γὰρ τὸ μέσον κατὰ ταῦτά ἐστιν ἐκάτερα, ὅσα μὴ μετενήνεκται: fr. B17).

Thus begins the Philolaean account of the origin and development of the Greek

κόσμος.<sup>147</sup> Many details of this account as extant are astronomical<sup>148</sup> and need not concern us here. More interesting to this study are what remains of Philolaus' perspective on the constitution of biological life (which is not restricted to the familiar earth):<sup>149</sup>

TEXT (DK, Huffman) <sup>150</sup>	TRANSLATION (Huffman)
καὶ τέσσαρες ἀρχαὶ τοῦ ζώιου τοῦ λογικοῦ, ὥσπερ καὶ Φιλόλαος ἐν τῷ Περὶ φύσεως λέγει, ἐγκέφαλος, καρδία, ὀμφαλός, αἰδοῖον. «κεφαλὰ μὲν νόου, καρδία δὲ ψυχᾶς καὶ αἰσθήσιος, ὀμφαλὸς δὲ ῥιζώσιος καὶ ἀναφύσιος τοῦ πρώτου, αἰδοῖον δὲ σπέρματος δὲ <ἔχει> τὰν ἀνθρώπῳ ἀρχάν, καρδία δὲ τὰν ζώου, ὀμφαλὸς δὲ τὰν φυτοῦ, αἰδοῖον δὲ τὰν ξυν-απάντων. πάντα γὰρ ἀπὸ σπέρματος καὶ θάλλονται καὶ βλαστάνονται.»	And there are four principles of the rational animal, just as Philolaus says in <i>On Nature</i> : brain, heart, navel, genitals. The head [is the seat] of intellect, the heart of life and sensation, the navel of rooting and first growth, the genitals of the sowing of seed and generation. The brain [contains] the origin of man, the heart the origin of animals, the navel the origin of plants, the genitals the origin of all (living things). For all things both flourish and grow from seed.  Philolaus, fr. B13 DK  <i>Theol. Ar.</i> 25.17
Φιλόλαος δὲ ὁ Κρ[ο]τωνιάτης συνεστάναι φησὶν τὰ ἡμέτερα σώμ[ατα ἐκ] θερμοῦ. ἀμέτ<οχ>α γὰρ αὐτὰ εἶναι ψυχροῦ[, ὑπομ]μνήσκων ἀπότινων τοιούτων· τὸ σπέρμ[α εἶναι θερ]μόν, κατασκευαστικὸν δὲ τοῦτο τ[οῦ ζώιου]· καὶ ὁ τόπος δέ, εἰς ὃν ἢ καταβολ[ή—μήτρα] δὲ αὕτη—ἐστὶν θερμότερα καὶ ἔοι[κναι] ἐκ]εῖναι τὸ δὲ ἔοικός τινι τὰτὸ δύναται, ὥι ἔοικεν· ἐπεὶ δὲ	Philolaus says that our bodies are constituted out of hot. For he says that they have no share of cold on the basis of something like the following considerations: Sperm is hot and this is what constitutes the animal. Also the place into which it is sown, the womb itself, is even hotter and like to the seed. But what is like something has the same power as that to

147 See Naddaf (2005), 123; Huffman (1993), 202-288. Apparently, this origin-and-development story included some provision for some regular destruction (either total or partial) of the earth nourishing the κόσμος as a whole, creating a cyclic reading of φύσις like others already examined; see fr. A18 DK and Huffman (1993), 261-265. Numbers seem to have been important as well, with each integer from 1 to 10 playing a special role in the constitution of the κόσμος; see fr. B20, A10 DK, Naddaf (2005), 123-124, and Huffman (1993), 279-288, 334-340.

148 The astronomical fragments are treated in depth by Huffman (1993), 231-288.

149 See fr. A17 (on the inhabitants of the counter-earth) and A20 DK (on the inhabitants of the moon).

150 Note that I have not marked marginal insertions or doubtful letters in fr. A27 DK.

τὸ κατασκευάζ[ον ἀμέ]τοχόν ἐστιν ψυχροῦ καὶ ὁ τόπος δέ, ἐν ᾧ[ι ἡ καταβολή], ἀμέτοχος ἐστιν ψυχροῦ, δῆλον [ὅτι καὶ τὸ] κατασκευζόμενον ζῶιον τοιοῦτο[ν γίνε]-ται.	<p>which it is like. Since that which constructs has no share of cold, and the place in which the sowing occurs has no share of the cold, it is clear that the animal that is constructed turns out to have the same character.</p> <p>Philolaus, fr. A27.1-10 DK</p> <p>Meno, Anon. Lond. 18.8</p>
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Philolaus' discussion of the human body is reminiscent of Empedocles' story of corporal evolution. Empedocles sees the human body as a late, composite creation of physical evolution, with the first bodies being nothing but a few organs joined together and later ones showing more familiar differentiation (eventually becoming the modern species familiar to the Greeks). All these bodies incorporate the same δαίμονες, a detail that confirms the Empedoclean (and Pythagorean) insight that all embodied life is related.<sup>151</sup> In fr. B13, Philolaus seems to take a similar perspective, with the familiar human body representing a composite of various organs, many of which exist elsewhere: (a) the αἰδοῖον, which creates seed that is the source of all life (πάντα ... ἀπὸ σπέρματος); (b) the ὀμφαλός, which makes plant life; (c) the καρδιά, which makes animal life (and separates animals from plants); (d) the κεφαλά, which makes human life, separating humans from animals and plants as a separate expression of the energy contained in the αἰδοῖον.<sup>152</sup> Fr. A27 construes the origin of the individual human being as analogous to the origin of the

<sup>151</sup> See pages 67-73 and 79 above.

<sup>152</sup> Note that this reading of the κεφαλά is inherited by Philolaus from the work of Alcmaeon of Croton, who is thought to have written some time in the late sixth or early fifth century. In the Ionian tradition, Alcmaeon and Diogenes of Apollonia divide biological life similarly to Philolaus (distinguishing humans from animals from plants and confirming that our source for fr. B13 DK does not simply conflate Philolaus with Aristotle); see Huffman (1993), 311.

κόσμος: as the latter comes into being in a central hearth (the *ἐστία* of fr. B7 above), so the former is born from warm seed (τὸ σπέρμ[α εἶναι θερμόν] placed in an even warmer womb (ὁ τόπος δέ, εἰς ὃν ἡ καταβολή—μήτρα] δὲ αὕτη—ἐστὶν θερμότερα).<sup>153</sup>

(4) *Ethics*. Fr. A27 goes on to make interesting points about human health, starting with (a) the function of respiration and moving on to consider (b) disease:

TEXT (DK, Huffman)	TRANSLATION (Huffman)
(a) εἰς δὲ τούτου τὴν κατασκ[ευὴν ὑ]πομνήσει προσχρῆται τοιαύτη· με[τὰ γὰρ] τὴν ἔκτεξιν εὐθέως [[το]] τὸ ζῶιον ἐπισπᾶται τὸ ἐκτὸς πνεῦμα ψυχρὸν ὄν· εἴτα πάλιν καθαπερεὶ χρέος ἐκπέμπει αὐτό. διὰ τοῦτο δὲ καὶ ὄρεξις τοῦ ἐκτὸς πνεύματος, ἵνα τῇ[ι] ἐπ<ε>ισάκτωι τοῦ πνεύματος ὀλκῇ θερμ[ό]τερα ὑπάρχοντα τὰ ἡμέτερα σώματα πρὸς αὐτοῦ καταψύχεται. καὶ τὴν μὲν σύστασιν τῶν ἡμετέρων σωμάτων ἐν τουτοῖς φησίν. (b) λέγει δὲ γίνεσθαι τὰς νόσους διὰ τε χολὴν καὶ αἷμα καὶ φλέγμα, ἀρχὴν δὲ γίνεσθαι τῶν νόσων ταῦτα· ἀποτελεῖσθαι δὲ φησιν τὸ μὲν αἷμα παχὺ μὲν ἔσω παραθλιβομένης τῆς σαρκός, λέπτων δὲ γίνεσθαι διαιρουμένων τῶν ἐν σαρκὶ ἀγγείων· τὸ δὲ φλέγμα συνίστασθαι ἀπὸ τῶν ὄμβρων φησίν. λέγει δὲ τὴν χολὴν ἰχώρα εἶναι τῆς σαρκός. παράδοξόν τε αὐτὸς ἀνὴρ ἐπὶ τούτου κεινεῖ· λέγει γὰρ μηδὲ τετάχθαι[ι] ἐπὶ τ[ῶι] ἥπατι χολήν, ἰχώρα μέντοι τῆς σαρκός εἶναι τὴν χολήν. τό τ' αὖ φλέγμα τῶν πλείστων ψυχ<ρ>ὸν [[θερμον]] εἶναι λεγόντων αὐτὸς θερμὸν τῇ φύσει ὑπ[ο]τίθεται· ἀπὸ γὰρ τοῦ φλέγειν φλέγμα εἰρησθαι· ταύτῃ δὲ καὶ φλεγμαίνον[τα] μετοχῇ τοῦ φλέγματος φλεγμ[α]ίνει. καὶ ταῦτα μὲν δὴ ἀρχὰς τῶν	(a) He also mentions the following sort of consideration regarding the construction of the animal: Immediately after birth the animal breathes in the external air which is cold. Then it sends it out again like a debt. Indeed, it is for this reason that there is a desire for external air, so that our bodies, which were too hot before, by the drawing in of breath from outside are cooled thereby. He says, then, that the constitution of our body depends upon these things. (b) He says that diseases arise through bile and blood and phlegm, and that these are the origin of diseases. He says that the blood is made thick when the flesh is squeezed inwards, but that it becomes thin when the vessels in the flesh are broken up. He says that phlegm is constituted from rains. Bile, he says, is a serum of the flesh. And the same man stirs up a paradox on this topic. For he says that bile is not even assigned to the liver, but rather that bile is a serum of the flesh. And again, while most people say that phlegm is cold, he himself postulates that it is hot by nature. For he says that 'phlegm' gets its name from <i>phlegein</i> ('to burn'). In this way also things that are inflamed are inflamed by taking part in

153 The likeness recognized here between Philolaean embryology (of the human) and cosmogony is already familiar to modern scholarship; see Naddaf (2005), 124; Huffman (1993), 293-297.

νό[σ]ων ὑπ[ο]τίθεται, [σ]υνεργὰ δὲ ὑπερ- βολ[άς] τε θερμασίας, τροφῆς, κατα- ψύ[ξ]εω[ς καὶ ἐ]νδείας <τούτων ἢ> τῶν τού[το]ι[ς] παραπλησίων].	phlegm. It is these then that he postulates as the origins of diseases. He says that excesses of heat, nutriment, and cooling as well as deficiencies of these or things like these also have a role.  Philolaus, fr. A27.10-30 DK  Meno, Anon. Lond. 18.8
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In the κόσμος imagined by Philolaus, (a) the respiratory cycle works thus: inspiration tempers the innate heat of the human being (an excessive heat) with external coolness (ἵνα τῇ[ι] ἐπ<ε>ισάκτωι τοῦ πνεύματος ὀλκῇ θερμ[ό]τερα ὑπάρχοντα τὰ ἡμέτερα σώματα πρὸς αὐτοῦ καταψύχεται), which exhalation promptly returns to the environment, as though paying back a debt (εἵτα πάλιν καθαπερεὶ χρέος ἐκπέμπει αὐτό). So Philolaean man exists as a physical equilibrium (or harmonization, combination: σύστασις) between inner heat and external cold. The Philolaean account of (b) disease develops this portrait of man as a temporary balance between hot and cold. Disease is a result of three internal bodily humors (γίνεσθαι τὰς νόσους διὰ τε χολὴν καὶ αἷμα καὶ φλέγμα), all of them hot: contemporary medical thought made χολή and αἷμα hot,<sup>154</sup> and Philolaus goes out of his way to claim heat for φλέγμα as well (αὐτὸς θερμὸν τῇ φύσει ὑπ[ο]τίθεται· ἀπὸ γὰρ τοῦ φλέγειν φλέγμα εἰρῆσθαι). Presumably, treatment consisted in tempering these internal sources of heat, supplementing their lack (if the humors became

154 See Huffman (1993), 297. Note that the Hippocratic treatise Περὶ ἀρχαίης ἰητρικῆς (late fifth century BCE) “attacks a group of thinkers who attempted to systematize medicine by reducing it to the interaction of one or more of the opposites hot, cold, wet, and dry, factors which had played an important role in much of early Greek natural philosophy” (Schiefelky [2005], 1). There is longstanding speculation that Philolaus represents one of the treatise’s targets; see Huffman (1993),



too thin: λέπτον δὲ γίνεσθαι διαιρουμένων τῶν ἐν σαρκὶ ἀγγείων) with external heat and cooling their excess (if the humors became too thick: τὸ μὲν αἷμα παχὺ μὲν ἔσω παραθλιβομένης τῆς σαρκός) with some kind of external coolant. This would explain the συνεργά of disease recognized by Philolaus: excess (ὑπερβολαί) and deficit (ἐνδειαί) in heat (θερμασία), cold (κατάψυξις), or nourishment (τροφή, which could be hot or cold). The role of the physician would then have been to recognize the precise nature of his patient's physical imbalance (i.e. whether the patient had too much or too little internal heat) and then apply sources of heat or cold as necessary to restore equilibrium.<sup>155</sup>

There are few strictly ethical fragments from Philolaus extant, and those few are terse. Nevertheless, we have enough information to make some interesting suggestions, particularly in light of Philolaus' medical theories. Witness the following:

TEXT (Huffman)	TRANSLATION (Huffman)
<i>Pythagoras et Philolaus harmoniam [animam esse dixerunt].</i>	Pythagoras and Philolaus [said that the soul was] a harmony.  Philolaus, fr. A23 DK  Macrob. <i>in Somn. Scip.</i> 1.14.19
καὶ γὰρ οὖν, ὦ Σώκρατες, οἶμαι ἔγωγε καὶ αὐτόν σε τοῦτο ἐντεθυμῆσθαι, ὅτι τοιοῦτον τι μάλιστα ὑπολαμβάνομεν τὴν ψυχὴν εἶναι, ὥσπερ ἐντεταμένου τοῦ σώματος ἡμῶν καὶ συνεχομένου ὑπὸ θερμοῦ καὶ ψυχροῦ καὶ ξηροῦ καὶ ὕγροῦ καὶ τοιούτων τινῶν, κρᾶσιν εἶναι καὶ ἁρμονίαν αὐτῶν τούτων τὴν ψυχὴν ἡμῶν, ἐπειδὴν ταῦτα καλῶς καὶ μετρίως κραθῇ πρὸς ἄλληλα—	[Simmias speaking:] For I think, Socrates, that you have realized yourself that we believe the soul to be something much like this: our body is as it were tensioned and held together by hot and cold and dry and wet and other things of this sort, and our soul is a blending and <i>harmonia</i> of these same things, when they have been finely and proportionately blended with one

155 Of course the real scheme was likely more complicated (with the three separate humors being more than just heat), but a basic distinction between heat and cold appears to have been its foundation, relating it closely to the Philolaean cosmogony.

<p>εἰ οὖν τυγχάνει ἡ ψυχὴ οὕσα ἀρμονία τις, δῆλον ὅτι, ὅταν χαλασθῇ τὸ σῶμα ἡμῶν ἀμέτρως ἢ ἐπιταθῇ ὑπὸ νόσων καὶ ἄλλων κακῶν, τὴν μὲν ψυχὴν ἀνάγκη εὐθὺς ὑπάρχει ἀπολωλέναι, καίπερ οὖσαν θειοτάτην, ὥσπερ καὶ αἱ ἄλλαι ἀρμονίαι αἵ τ' ἐν τοῖς φθόγγοις καὶ ἐν τοῖς τῶν δημιουργῶν ἔργοις πᾶσι ...</p>	<p>another. So if the soul turns out to be some sort of <i>harmonia</i>, it is clear that when our body is slackened or tautened by diseases and other evils, it is inevitable that the soul must perish at once, most divine though it be, just like other <i>harmoniai</i>, those in the notes and in all the things craftsmen make...</p> <p>Plato, <i>Phaedo</i> 86b5</p>
<p>καὶ ἄλλη δέ τις δόξα παραδέδοται περὶ ψυχῆς, πιθανὴ μὲν πολλοῖς οὐδεμιᾶς ἥττον τῶν λεγομένων ... ἀρμονίαν γὰρ τινὰ αὐτὴν λέγουσι· καὶ γὰρ τὴν ἀρμονίαν κρᾶσιν καὶ σύνθεσιν ἐναντίων εἶναι καὶ τὸ σῶμα συγκεῖσθαι ἐξ ἐναντίων.</p>	<p>Another view has also been handed down about the soul which many find as convincing as any view put forward ... for they say that the soul is a kind of <i>harmonia</i>. Indeed [they say] also that <i>harmonia</i> is a blending and combination of opposites and the body is composed of opposites.</p> <p>Aristot. <i>De anima</i> 1.4.407b27</p>

In fr. A23, Macrobius attributes a Pythagorean equation between soul (*anima*, ψυχή) and harmony (an equation familiar to Plato and Aristotle)<sup>156</sup> to Philolaus. As presented most clearly by Plato, this equation reduces soul to an emergent physical phenomenon which begins to disintegrate (εὐθὺς ὑπάρχει ἀπολωλέναι) when something disturbs the corporal equilibrium upon which it depends (ὅταν χαλασθῇ τὸ σῶμα ἡμῶν ἀμέτ-ρως ἢ ἐπιταθῇ ὑπὸ νόσων καὶ ἄλλων κακῶν).<sup>157</sup> In other words, soul becomes another material expression of cosmic harmony analogous to (and to some extent dependent on) the somatic σύστασις in fr. A27. This impression is confirmed by another very interesting

<sup>156</sup> For more references, see Huffman (1993), 324-326.

<sup>157</sup> While other thinkers need not follow Simmias down this path, it is interesting to note that the Pythagorean Empedocles does not see δαίμονες as immortal: if his psychic harmony is more robust than that of Simmias, it is still not indissoluble. See pages 73-76 above.

fragment:

TEXT ( <i>Huffman</i> )	TRANSLATION ( <i>Huffman</i> )
ὥστε καὶ διάνοιαί τινες καὶ πάθη οὐκ ἔφ' ἡμῖν εἰσιν, ἢ πράξεις αἱ κατὰ τὰς τοιαύτας διανοίας καὶ λογισμούς, ἀλλ' ὥπερ Φιλόλαος ἔφη εἶναί τινας λόγους κρείττους ἡμῶν.	So that certain thoughts and affections are not in our control, nor are the actions which are in accord with such thoughts and calculations, but as Philolaus said, some motives are stronger than we are.  Philolaus, fr. B16 DK  Aristot. <i>Eth. Eud.</i> 2.8.1225a30

Cosmic harmony produces the world-order, then bodies, then souls, none of which exists independently or absolutely: all are more or less determined by harmony. Nevertheless, the recognition of certain λόγοι whose influence humans cannot resist presumes that there are others over which control can be exerted. This raises a question: did Philolaus provide any kind of instruction to the moralist who might play physician to the soul (see page 102 above), attempting to restore psychic harmony by the addition or omission of certain behaviors whose influence was unbalancing? It is impossible to say for certain, but what we have shows that he certainly could have. There is no compelling reason to assume that Philolaus (or any of the early thinkers examined here) separated what we call ethics (or psychology) from what we call physics (or cosmology): for them, the κόσμος included all kinds of order; for Philolaus, everything is a result of cosmic ἀρμονία between limiting and unlimited material elements.

### **Conclusion: The Atomists' Problem**

The foregoing creates a back-story for early Greek atomism comprised of two

principle elements: (1) Greece during the transition from the Archaic Age to the Classical, with most of our attention focused on Abdera as it existed from its foundation to the end of the fifth century; (2) the Critical Tradition, which we have explored by taking a brief survey of authors who predate the atomists in it (or, in the case of Philolaus, represent ideas significantly older than atomism). The first element gives us a picture of the πόλις familiar to the atomists, a πόλις we also meet in the ethical fragments of Democritus. The second gives us a picture of the company the atomists joined when they published books like the Διάκοσμοι and the Τριτογένεια (manuals for understanding the world and our place in it as human beings), outlining the unique approach to φύσις developed by the Critical Tradition.

As we have seen, that approach typically constructs an origin-and-development narrative comprising four parts: (a) cosmogony; (b) zoogony; (c) anthropogony; (d) practical, ethical applications of the information provided in items (a)-(c), sometimes with the hint of a politogony (i.e. a history of the development of human institutions). In no case did we find any clean break between items (a)-(c) and item (d).<sup>158</sup> Anaximander

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<sup>158</sup> The closest thing to such a break occurs in Xenophanes, who is extant only in brief fragments. Even if we absolve him (and perhaps Parmenides) of creating a narrative that explicitly approaches ethics from a physiological perspective, we still find him (and Parmenides) making both physical and ethical pronouncements from an explicitly universal vantage point (a perspective that sees all phenomena). Thus, even where ethics and physics are least related in the Critical Tradition, they are still presumed to belong together somehow (with the details of their relationship obscured primarily by lack of data, secondarily by the difficulty of relating them to one another meaningfully). This observation vindicates Plutarch's polemic against Colotes (see the Introduction above), a polemic that takes its strength from the assertion that early philosophers (including thinkers in the Critical Tradition) were advocates for proper moral behavior as something which they regarded as a vital concern (as vital as physics, with which they were also fundamentally concerned). The ethics Critical thinkers discussed were not ethics for a world without physics, and their physics were not created for a world without ethics. Rather, physics and ethics were integrated parts of the whole that they were investigating—a whole that we might call the human experience, a whole that did not admit the kind of absolute barrier that modern conventions draw between hard and soft sciences.

speaks of natural justice and vengeance without separating these clearly from any unnatural counterparts (though he is only imperfectly extant). The god of Xenophanes is both morally and physically perfect. Heraclitus does not restrict war to ethics or fire to physics. Parmenides sees Being everywhere; Empedocles love and strife (ethical realities before he expresses them as physical ones); Anaxagoras mind; and Philolaus harmony. An apt expression of the unifying, universal perspective evident throughout the Critical Tradition comes from Porphyry, summarizing Pythagoras: πρὸς δὲ τούτοις ὅτι κατὰ περιόδου τινὰς τὰ γενόμενά ποτε πάλιν γίνεται, νέον δ' οὐδὲν ἀπλῶς ἔστι (*Vita Pythagor.* 19 = DK14A8). From a human perspective, life is a series of repeating events (with no hard lines between ethical events and physical ones: all we know is that everything we see has been seen before and will be seen again). Given the trend apparent here, we would not expect the atomists to separate ethics from physics *a priori*.

The atomists' problem is two-fold (like our presentation in this chapter). (1) First, like their predecessors in the Critical tradition, they have to make sense of the ancient Greek world-order in its entirety. (2) Second, they have to present their vision of that world-order in a compelling way, competing successfully with alternative explanations (such as those already offered) and accommodating the reality of new information (a reality which Parmenides confronted most directly when he put Being beyond the reach of definitive expression: one can only go as far as human μῆτις allows). In what follows, we will examine their approach to this problem, showing how they inherited and improved upon earlier work in the Critical Tradition.

## CHAPTER 2. THE EARLY ATOMISTS' ΔΙΑΚΟΣΜΟΣ

### Introduction: Democritus and Leucippus as Authors (2.1)

Democritus is credited with many more books than any other author in the Critical Tradition: the Thrasyllan list (compiled sometime before 36 CE) gives seventy titles with claim to be genuine (Diog. 9.45-49 = Democritus, fr. cxv Luria).<sup>1</sup> None of these works remains extant today, and tradition confirms what such a large corpus might lead us to suspect: Democritus was not above changing his mind, correcting (and contradicting) his expressed opinions.<sup>2</sup> Nonetheless, the written account(s) of the Greek universe that he produced was (or were) complicated and coherent enough to support relatively extensive summaries in the ancient doxography (e.g. Diog. 9.44-45 and Hippol. *Refut.* 1.13; see items [c] and [d] below), summaries that are significantly consistent (internally with themselves and externally with one another).

Ancient tradition<sup>3</sup> makes Leucippus the teacher of Democritus (who was born before 450 and died before 350)<sup>4</sup> and the founder of atomism, though Epicurus denied his existence (Diog. 10.13 = fr. 2 Taylor). Leucippus' reputation as an author rests on a single attribution, already disputed in antiquity: according to the Thrasyllan list (cited above), the disciples of Theophrastus traced the treatise Μέγας διάκοσμος to him,

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1 Of all the non-atomist authors examined thus far, Philolaus is the one on record with the most titles (five, a small number compared to seventy: see page 94 above in chapter 1). In fairness, there is no knowing how many poems Xenophanes composed.

2 See fr. lix Luria: αὐτός τε Ἀριστοτέλης Δημόκριτός τε καὶ Χρύσιππος ἔνια τῶν πρόσθεν αὐτοῖς ἀρεσκόντων ἀθορυβῶς καὶ ἀδήκτως καὶ μεθ' ἡδονῆς ἀφεῖσαν (Plut. *De virt. mor.* 7.448a); [Δημοκρίτου] Κρατυντήρια, ὅπερ ἔστιν ἐπικριτικά τῶν προειρημένων (Diog. 9.47).

3 The earliest testimonia come from Aristotle: *Metaph.* 985b4-22, *De gen. et corr.* 324b35-326b6 (= fr. 46a, 48a Taylor, and fr. 7, 16, 173, 241, 146 Luria).

4 For a discussion of the different chronologies proposed for Democritus, see Taylor (1999), 158, note 2.

although the list itself assigns this title to Democritus and later tradition makes it Democritus' magnum opus (Diog. 9.39-40; Athen. 4.168b).<sup>5</sup> In defense of Theophrastus' followers, they enter the historical record earlier than their rivals, and there is no reason the relatively extensive summaries of Leucippian thought extant in the doxography (e.g. Diog. 9.30-33 and Hippol. *Refut.* 1.12; see items [a] and [b] below) could not come from writing(s) originating with the first atomist (granting his existence). But these summaries might just as easily derive from the writings of Democritus (playing Plato to Leucippus' Socrates). We lack the information necessary for a definitive decision.

In light of the foregoing, I offer the following observations on authorship in early atomism: (1) Democritus is credited with writing more than anyone in the Critical Tradition, including his teacher Leucippus, who may or may not have written (as he may or may not have existed, though we have no good reason to side with Epicurus against Aristotle).<sup>6</sup> (2) There is no compelling reason to separate Democritus and Leucippus, who were already so hard to distinguish in antiquity that an important book like the *Μέγας διάκοσμος* could be ascribed to either. In keeping with this observation, this chapter examines Leucippian physics (as extant) alongside Democritean. Thus the chapter is about the *διάκοσμος* of the atomists, rather than simply the *διάκοσμος* of Democritus (though he is still our principal witness, since he has more fragments extant).

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5 Achilles Tatius (third century CE) also cites this book as a work of Democritus: τοὺς ἀστέρας δὲ ζῶια εἶναι οὔτε Ἀναξαγόραι οὔτε Δημοκρίτῳ ἐν τῷ Μεγάλῳ διακόσμῳ δοκεῖ (*Isag.* 1.13 = Leucippus, fr. B1 DK; Democritus, fr. 392 Luria). It is not inconceivable that both early atomists produced a *Μέγας διάκοσμος*, but this is more than the testimonia tell us.

6 Chronological proximity favors Aristotle over Epicurus as a witness to Leucippus' historicity.

## Early Atomist Cosmogony (2.2)

The atomists offer a story about the origin and development of the universe. Like other such stories in the Critical Tradition, theirs begins with elemental physical material:

TEXT ( <i>editor</i> )	TRANSLATION ( <i>Taylor</i> )
(a <sub>1</sub> ) πρῶτός τε ἀτόμους ἀρχὰς ὑπεστήσατο ... τὸ μὲν πᾶν ἄπειρόν φησιν, ὡς προεῖρηται· τούτου δὲ τὸ μὲν πλήρες εἶναι, τὸ δὲ κενόν, <ᾗ> καὶ στοιχεῖά φησι. κόσμους τε ἐκ τούτων ἀπείρους εἶναι καὶ διαλύεσθαι εἰς ταῦτα. ( <i>Marcovich [1999]</i> )	[Leucippus] was the first to put forward the atoms as principles ... He says that the universe is infinite, as has been said. Part of it is a plenum, and part void, which he says are the elements. There are infinitely many worlds composed of this, and they are resolved into those elements.  Leucippus, fr. A1 DK = fr. 77a Taylor = fr. 289, 318, 355, 382, 389 Luria  Diog. 9.30-31
(b <sub>1</sub> ) Λεύκιππος δὲ Ζήνωνος ἐταῖρος οὐ τὴν αὐτὴν δόξαν διетήρησεν, ἀλλὰ φησιν ἄπειρα εἶναι καὶ ἀεὶ κινούμενα καὶ γένεσιν καὶ μεταβολὴν συνεχῶς οὖσαν. στοιχεῖα δὲ λέγει τὸ πλήρες καὶ τὸ κενόν. ( <i>Luria</i> )	Leucippus, an associate of Zeno, did not adhere to the same doctrine, but says things are infinitely many and always in motion, and that coming to be and change are continuous. He says that the elements are the plenum and the void.  Leucippus, fr. A10 DK = fr. 78 Taylor = fr. 151 Luria  Hippol. <i>Refut.</i> 1.12
(c <sub>1</sub> ) δοκεῖ δὲ αὐτῷ τάδε· ἀρχὰς εἶναι τῶν ὅλων ἀτόμους καὶ κενόν, τὰ δ' ἄλλα πάντα νενομίσθαι [δοξάζεσθαι]. ἀπείρους τε εἶναι κόσμους καὶ γεννητοὺς καὶ φθαρτοὺς. μηδέν τε ἐκ τοῦ μὴ ὄντος γίνεσθαι μηδὲ εἰς τὸ μὴ ὄν φθείρεσθαι. καὶ τὰς ἀτόμους δὲ	[Democritus'] doctrines are as follows. The principles of everything are atoms and void, and everything else is conventional. There are infinitely many worlds which come into being and pass away. Nothing comes into being from what is not, or passes away into what is not. The atoms are



<p>ἄπειρους εἶναι κατὰ μέγεθος καὶ πλῆθος ... (<i>Marcovich [1999]</i>)</p>	<p>infinite in size and number ...</p> <p>Democritus, fr. A1 DK = fr. 6 Taylor = fr. 93, 184, 215, 382 Luria</p> <p>Diog. 9.44</p>
<p>(d<sub>1</sub>) λέγει δὲ ὁμοίως Λευκίππῳ περὶ στοιχείων, πλήρους καὶ κενοῦ, τὸ μὲν πλήρες λέγων ὄν, τὸ δὲ κενὸν οὐκ ὄν· ἔλεγε δὲ ὡς αἰεὶ κινουμένων τῶν ὄντων ἐν τῷ κενῷ ... (<i>Luria</i>)</p>	<p>Like Leucippus, he says that the elements are plenum and void, calling the plenum what is and the void what is not. He said that the things that there are are always in motion in the void ...</p> <p>Democritus, fr. A40 DK = fr. 78 Taylor = fr. 349 Luria</p> <p>Hippol. <i>Refut.</i> 1.13</p>

As witnessed by the most extensive summaries of atomist cosmogony in the doxography (to which this section will refer repeatedly), πλήρες (ὄν) and κενόν (οὐκ ὄν)<sup>7</sup> are the atomist equivalents to Anaximander's ἄπειρον, Xenophanes' γαῖα, Heraclitus' πῦρ, Parmenides' ἑόν, Empedocles' ῥιζώματα, Anaxagoras' πάντα χρήματα (ἄπειρα καὶ πλῆθος καὶ σμικρότητα: DK59B1), or the ἄπειρα καὶ περαίνοντα of Philolaus. Unlike

<sup>7</sup> Judging from extant quotations, the atomists used various different words to refer to (i) atoms and (ii) void: (i) ἄτομα (fr. 55 Luria); δέν (fr. 156, 197 Luria); πλήρες (fr. 197 Luria); ναστόν (fr. 197 Luria); ὄν (fr. 197, 349 Luria); ἰδέαι (fr. 198 Luria); (ii) κενόν (fr. 55 Luria); μηδέν (fr. 156 Luria); οὐκ ὄν (fr. 349 Luria). Among the doxographers with access to atomist texts, Aristotle refers to atoms and void as τὸ μανὸν καὶ τὸ πύκνον (*Metaph.* 1.4.985b4 = fr. 241 Luria), Cicero latinizes Leucippus' elements as *plenum et inane* (*Acad. priora* 2.37.118 = fr. 165 Luria), and both Aristotle (*De gen. et corr.* 1.1.314a21 = fr. 240 Luria) and Theophrastus (*De sensu* 65 = fr. 496 Luria) refer to Democritus' atoms as σχήματα: this reception tends to support the authenticity of the terms πλήρες, ναστός, κενόν, and ἰδέαι. Theodore (c. 393-c. 457 CE) parses the historical development of atomist terminology thus (in *Affect.* 4.57.9 = fr. 199 Luria): (1) τὸ κενὸν καὶ τὰ ναστά (Democritus); (2) κενὸν καὶ ἀδιάρετα (Metrodorus of Chios); (3) (void and) ἄτομα (Epicurus). The omission of Leucippus (see page 107 above) confirms that this account is probably Epicurean and therefore indecisive against the non-polemical account of Sextus (2<sup>nd</sup> cent. CE), who puts the word ἄτομα in Democritus' mouth (fr. 55 Luria) and claims familiarity with written works by Democritus (Περὶ ἰδεῶν, Κρατυντήρια: fr. 48-50, 55 Luria), including one title from the Thrasyllan list (Κρατυντήρια: fr. cxv Luria).

their predecessors, the atomists explicitly believe in nothingness (κενόν) as an element of physical reality (directly contradicting Parmenides' denial of nonbeing),<sup>8</sup> an emptiness in which solid atoms (πλήρεις) move about eternally (ἀεὶ κινούμενα: [b<sub>1</sub>]; ἀεὶ κινουμένων τῶν ὄντων ἐν τῷ κενῷ: [d<sub>1</sub>]). As infinite atoms (ἄπειρα εἶναι: [b<sub>1</sub>]; τὰς ἀτόμους δὲ ἀπείρους εἶναι [c<sub>1</sub>]) move through infinite emptiness (τὸ μὲν πᾶν ἄπειρόν φησιν: [a<sub>1</sub>]), they form infinite world-orders (κόσμους τε ἐκ τούτων ἀπείρους εἶναι: [a<sub>1</sub>]; ἀπείρους τε εἶναι κόσμους: [c<sub>1</sub>]).<sup>9</sup> None of these orders is permanent (εἶναι κόσμους καὶ γενητούς καὶ φθαρτούς: [c<sub>1</sub>]); each one eventually dissolves into its component parts, solid particles and emptiness (κόσμους τε ἐκ τούτων [i.e. τοῦ πλήρους καὶ τοῦ κενοῦ] ἀπείρους εἶναι καὶ διαλύεσθαι εἰς ταῦτα: [a<sub>1</sub>]). As these endless κόσμοι come and go, nothing ever comes from nothing or dissolves into nothing: everything is atoms going through endless permutations (καὶ γένεσιν καὶ μεταβολὴν συνεχῶς οὔσαν: [b<sub>1</sub>]) facilitated by inert void (μηδὲν τε ἐκ τοῦ μὴ ὄντος γίνεσθαι μηδὲ εἰς τὸ μὴ ὄν φθείρεσθαι: [c<sub>1</sub>]).<sup>10</sup> There is no enduring reality outside of atoms and void; anything that seems to be such is merely notional (ἀρχὰς εἶναι τῶν ὅλων ἀτόμους καὶ κενόν, τὰ δ' ἄλλα πάντα νενομίσθαι: [c<sub>1</sub>]).

8 Simplicius makes the explicit confrontation with Parmenides a contribution of Leucippus, whom tradition remembers as an associate of Parmenides' pupil Zeno (Simpl. *in Phys.* 28.4 = DK67A8, fr. 147). This is accepted by von Fritz (1963), 14-18.

9 For earlier instances of cosmic infinity in the Critical Tradition, see pages 86-94 (Anaxagoras) and note 24 (Anaximander) above in chapter 1. Where earlier, pre-atomist ideas of cosmic infinity are harder to pin down precisely (owing to lack of evidence), it is clear that Leucippus and Democritus understood their infinite κόσμοι to exist simultaneously (as contemporary alternative universes) and sequentially (as recycled systems incorporating atoms and void from older universes): see fr. 344, 349-350 Luria, Kahn (1960, 33-35, 46-53) and KRS (fr. 111-114).

10 For more on the role of void in allowing for movement (and the kind of real, non-illusory change that Parmenides denies, e.g. οὐ γὰρ ἀποτμήξει τὸ ἐὸν τοῦ ἐόντος ἔχεισθαι [fr. 6 Coxon]), see fr. 255-260 Luria. On the distinction between internal void (void enclosed by atoms) and external void (the endless outer space in which all atoms move), see fr. 268-270.

As the only enduring material that exists, atoms recycle through endless κόσμοι without suffering any change to their structure as individual particles; all that changes is their position relative to one another.<sup>11</sup>

Void and perpetually moving atoms are not the only controlling factors in the atomist cosmogony, which proceeds as follows:

TEXT ( <i>editor</i> )	TRANSLATION ( <i>Taylor</i> )
(a <sub>2</sub> ) γίνεσθαι δὲ τοὺς κόσμους οὕτω· φέρεσθαι κατὰ ἀποτομὴν ἐκ τῆς ἀπείρου· πολλὰ σώματα παντοῖα τοῖς σχήμασιν εἰς μέγα κενόν, ἅπερ ἄθροισθέντα δίνην ἀπεργάζεσθαι μίαν, καθ' ἣν προσκρούοντα <ἀλλήλοις> καὶ παντοδαπῶς κυκλούμενα διακρίνεσθαι χωρὶς τὰ ὅμοια πρὸς τὰ ὅμοια. ἰσορρόπων δὲ διὰ τὸ πλῆθος μηκέτι δυναμένων περιφέρεσθαι, τὰ μὲν λεπτὰ χωρεῖν εἰς τὸ ἔξω κενόν, ὥσπερ διαττώμενα· τὰ δὲ λοιπὰ συμμένειν καὶ περιπλεκόμενα συγκατατρέχειν ἀλλήλοις καὶ ποιεῖν πρῶτόν τι σύστημα σφαιροειδές. τοῦτο δὲ οἶον ὑμένα ὑφίστασθαι, περιέχοντα ἐν ἑαυτῷ παντοῖα σώματα· ὧν κατὰ τὴν τοῦ μεσοῦ ἀντέρεισιν περιδινουμένων λεπτὸν γενέσθαι τὸν περίξ ὑμένα, συρρεόντων ἀεὶ τῶν συνεχῶν κατ' ἐπίψαυσιν τὴν δίνης. καὶ οὕτω γενέσθαι τὴν γῆν, συμμενόντων τῶν ἐνεχθέντων ἐπὶ τὸ μέσον. αὐτόν τε πάλιν τὸν περιέχοντα οἶον ὑμένα αὔξεσθαι κατὰ τὴν	The worlds come into being in this way. A large number of bodies of every shape become separated from the infinite into a great void, congregate together and form a single swirl, in which, as they collide and circle in all sorts of ways, they are separated out, like to like. Because of their number they can no longer rotate in equilibrium, but the small ones are as it were sifted out into the external void; the rest remain, and, becoming entangled with one another, move round together, making up a primary spherical structure. There separates off from this a sort of membrane, containing bodies of every kind; as these swirl round the surrounding membrane becomes thin through the resistance of the central mass, as the bodies on its inner surface are continually flowing off into the centre because of the contact within the swirl. In this way the earth comes into being, as the bodies which have been

<sup>11</sup> The key witness to this principle (implicit in the cosmogonic narratives) is Aristotle (*De gen. et corr.* 1. 1.314a21, *Metaph.* 1.4.985b4 and 7.2.1042b11 = fr. 240-242 Luria), who attributes to the atomists the idea that each individual atom has (1) a particular shape (compare the difference between the letters A and N), (2) a particular order in whatever compound it helps to form (compare the difference between AN and NA), and (3) a particular orientation (compare the letters Z and N, which have the same shape but are oriented differently on the page). These three characteristics of individual atoms recur throughout the received tradition, especially in Aristotelian commentators (see fr. 243-248 Luria), and the alphabetic analogy appears to originate with the atomists (see Lact. *Inst.* 3.17.22 = fr. 241 Luria). See Taylor (1999), 171-172; Barnes (1982), 363-365; KRS fr. 555-557.

<p>ἐπέκκρισιν τῶν ἔξωθεν σωμάτων· δίνῃι τε φερόμενον αὐτόν, ὣν ἂν ἐπιψάύσῃ, ταῦτα ἐπικτᾶσθαι. τούτων δέ τινα συμπλεκόμενα ποιεῖν σύστημα, τὸ μὲν πρῶτον κάθυγρον καὶ πηλῶδες, ξηρανθέντα δὲ καὶ περιφερόμενα σὺν τῇι τοῦ ὅλου δίνῃι, εἴτ' ἐκπυρωθέντα τὴν τῶν ἀστέρων ἀποτελέσαι φύσιν. (<i>Marcovich [1999]</i>)</p>	<p>carried into the middle remain there; and on the other hand the surrounding membrane grows by separating off bodies from the outside, adding to itself any which it touches as it whirls round. Some of these fasten together into a structure which is at first moist and muddy, but which dries as it rotates in the universal swirl, finally catching fire and constituting the nature of the stars.</p> <p>Leucippus, fr. A1 DK = fr. 77a Taylor = fr. 289, 318, 382, 389 Luria</p> <p>Diog. 9.31-32</p>
<p>(b<sub>2</sub>) κόσμους δὲ &lt;ῶδε&gt; γίνεσθαι λέγει· ὅταν εἰς μέγα κενὸν ἐκ τοῦ περιέχοντος ἀθροισθῇ πολλὰ σώματα καὶ συρρυῇ, προσκρούοντα ἀλλήλοις συμπλέκεσθαι τὰ ὁμοιοσχήμονα καὶ παραπλήσια τὰς μορφάς, καὶ *περιπλεχθέντων εἰς ἕτερα γίνεσθαι*<sup>12</sup> ... (<i>Luria</i>)</p>	<p>He says that worlds come into being in this way; when many bodies are collected out of the surroundings and flow together into a great void, in their collisions those of the same and similar shapes get entangled, and *after being entangled they turn into different things*<sup>13</sup> ...</p> <p>Leucippus, fr. A10 DK = fr. 78 Taylor = fr. 291 Luria</p> <p>Hippol. <i>Refut.</i> 1.12</p>
<p>(c<sub>2</sub>) καὶ τὰς ἀτόμους ... φέρεσθαι δ' ἐν τῷ ὅλῳ δινουμένας. καὶ οὕτω πάντα τὰ συγκρίματα γεννᾶν, πῦρ, ὕδωρ, ἀέρα, γῆν· εἶναι γὰρ καὶ ταῦτα ἐξ ἀτόμων τινῶν συστήματα· ἅπερ εἶναι ἀπαθῇ καὶ ἀναλλοίωτα διὰ τὴν στερρότητα. τὸν τε ἥλιον καὶ τὴν σελήνην ἐκ τοιούτων λείων</p>	<p>The atoms ... are carried about in the whole in a swirl, and in that way they generate all the compounds, fire, water, air, earth. For these things too are complexes of atoms, which are incapable of being affected and changeless because of their solidity. The sun and moon are compound-</p>

12 Here I follow the reading of the MSS over emendations proposed by Diels (περιπλεχθέντων ἄστρα γίνεσθαι) and Luria (περιπλεχθέντων εἰς ἕτερα μετακοσμηθῆναι καὶ ἕτερα γίνεσθαι), since I believe the original text offers fewer problems. Starting with the *Theognidea* (162), we see the preposition εἰς used with the predicate of γίγνομαι (see LSJ s.v.).

13 Taylor's translation has been altered to suit my choice of text. The original follows Diels' emendation.

καὶ περφερωῶν ὄγκων συγκεκριθῆναι ... ( <i>Marcovich [1999]</i> )	ed of smooth, round bodies of that kind ...  Democritus, fr. A1 DK = fr. 6 Taylor = fr. 93, 184, 215, 382 Luria  Diog. 9.44
(d <sub>2</sub> ) ἀπείρους δὲ εἶναι κόσμους καὶ μεγέθει διαφέροντας. ἐν τισὶ δὲ μὴ εἶναι ἥλιον μηδὲ σελήνην, ἐν τισὶ δὲ μείζω τῶν παρ' ἡμῖν καὶ ἐν τισὶ πλείω. εἶναι δὲ τῶν κόσμων ἄνισα τὰ διαστήματα καὶ τῇ μὲν πλείους, τῇ δὲ ἐλάττους καὶ τοὺς μὲν αὖξεσθαι, τοὺς δὲ ἀκμάζειν, τοὺς δὲ φθίνειν, καὶ τῇ μὲν γίνεσθαι, τῇ δὲ ἐκλείπειν. φθείρεσθαι δὲ αὐτοὺς ὑπ' ἀλλήλων προσπίπτοντας. εἶναι δὲ ἐνίους κόσμους ἐρήμους ζώων καὶ φυτῶν καὶ παντὸς ὕγροῦ. τοῦ δὲ παρ' ἡμῖν κόσμου πρότερον τὴν γῆν τῶν ἀστρῶν γενέσθαι, εἶναι δὲ τὴν μὲν σελήνην κάτω, ἔπειτα τὸν ἥλιον, εἶτα τοὺς ἀπλανεῖς ἀστέρας. τοὺς δὲ πλανήτας οὐδ' αὐτοὺς ἔχειν ἴσον ὕψος. ἀκμάζειν δὲ κόσμον, ἕως ἂν μηκέτι δύνῃται ἔξωθεν τι προσλαμβάνειν. ( <i>Luria</i> )	[He says] that there are infinitely many worlds differing in size, some with neither sun nor moon, some with sun and moon larger than ours and some with more. The distances between the worlds are unequal, and there are more in some parts of the universe and fewer in others; some are growing, some are at their peak, and some decaying, and in some parts they are coming into being and in others ceasing to be. They are destroyed by collision with one another. There are worlds without animals or plants or any moisture. In our world the earth came into being before the stars, and the moon is the lowest, then the sun, then the fixed stars. Nor are the planets at equal heights either. A world is at its peak until it can no longer assimilate material from the outside.  Democritus, fr. A40 DK = fr. 78 Taylor = fr. 349, 391 Luria  Hippol. <i>Refut.</i> 1.13

These narratives are complicated and problematic (showing idiosyncratic divergence),<sup>14</sup>

but several salient things emerge from reading them together. First, the atomists appear

to follow Empedocles and Anaxagoras<sup>15</sup> in positing vortices as causative in creating

14 E.g. the attempt to combine atomism with a theory of four elements in Diog. 9.44, which may or may not go back to Democritus. My treatment of atomist physical doctrines aims to remain as general and uncontroversial as possible.

15 For the δίνη of Empedocles, see note 90 above in chapter 1. For the περιχώρησις of Anaxagoras, see

κόσμοι (ἄπερ ἀθροισθέντα δίνην ἀπεργάζεσθαι μίαν [a<sub>2</sub>]; καὶ τὰς ἀτόμους ... φέρεσθαι δ' ἐν τῷ ὅλῳ δινουμένας [c<sub>2</sub>]). An individual vortex comes into being when a particular crowd of atoms spontaneously flows together into a particular area of void (φέρεισθαι κατὰ ἀποτομήν ἐκ τῆς ἀπείρου πολλὰ σώματα παντοῖα τοῖς σχήμασιν εἰς μέγα κενόν [a<sub>2</sub>]; ὅταν εἰς μέγα κενὸν ἐκ τοῦ περιέχοντος ἀθροισθῇ πολλὰ σώματα καὶ συρρυῇ [b<sub>2</sub>]). Whirling together in the vortex, the atoms spontaneously sort themselves: like particles go with like (καὶ παντοδαπῶς κυκλούμενα διακρίνεσθαι χωρὶς τὰ ὅμοια πρὸς τὰ ὅμοια [a<sub>2</sub>]; προσκρούοντα ἀλλήλοις συμπλέκεσθαι τὰ ὁμοιοσχήμονα καὶ παραπλήσια τὰς μορφάς: [b<sub>2</sub>]),<sup>16</sup> interlocking to form material compounds (τοῦτο δὲ οἶον ὑμένα ὑφίστασθαι ... τούτων δέ τινα συμπλεκόμενα ποιεῖν σύστημα: [a<sub>2</sub>]; προσκρούοντα ἀλλήλοις συμπλέκεσθαι τὰ ὁμοιοσχήμονα καὶ ... εἰς ἕτερα γίνεσθαι: [b<sub>2</sub>]; φέρεσθαι δ' ἐν τῷ ὅλῳ δινουμένας. καὶ οὕτω πάντα τὰ συγκρίματα γεννᾶν: [c<sub>2</sub>]), including the familiar physical phenomena (e.g. earth, water, fire, air, sun, moon, and stars) whose cyclical interaction constitutes the Greek world-order (συρρεόντων ἀεὶ τῶν συνεχῶν κατ' ἐπίψαυσιν τὴν δίνης. καὶ οὕτω γενέσθαι τὴν γῆν ... ξηρανθέντα δὲ καὶ περιφερόμενα σὺν τῇ τοῦ ὅλου δίνῃ, εἴτ' ἐκπυρωθέντα τὴν τῶν ἀστέρων ἀποτελέσαι φύσιν: [a<sub>2</sub>]; καὶ οὕτω πάντα τὰ συγκρίματα γεννᾶν, πῦρ, ὕδωρ, ἀέρα, γῆν· εἶναι γὰρ καὶ ταῦτα ἐξ ἀτόμων τινῶν συστήματα ... τὸν τε ἥλιον καὶ τὴν σελήνην ἐκ τοιούτων λείων καὶ περφερῶν

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pages 84-86 above in chapter 1. Notice that the atomists do not posit a single vortex (Anaxagoras as extant) or series of vortices succeeding one another forever (Empedocles): the atomists' vortices occur simultaneously throughout all existence, like the κόσμοι that they create—κόσμοι in which celestial bodies circle a central earth in time with its seasonal transformation (see Diog. 9.31-32 and Hippol. *Refut.* 1.13 above), a striking phenomenon that seems to have inspired the original idea of a creative cosmic vortex.

16 Democritus explicitly embraces this idea of homogeneity in fr. 316 Luria (see page 127 below).

ὄγκων συγκεκρίσθαι: [c<sub>2</sub>]). According to the summary of Democritean ideas preserved by Hippolytus, the individual κόσμος grows as long as its vortex continues drawing atoms from the outside: when it can no longer accept external atoms, it reaches maturity in the manner of a living being (ἀκμάζειν δὲ κόσμον, ἕως ἂν μηκέτι δύνηται ἔξωθεν τι προσλαμβάνειν: [d<sub>2</sub>]) and begins to decay (καὶ τοὺς μὲν αὖξασθαι, τοὺς δὲ ἀκμάζειν, τοὺς δὲ φθίνειν, καὶ τῇ μὲν γίνεσθαι, τῇ δὲ ἐκλείπειν: [d<sub>2</sub>]).<sup>17</sup> According to the same source, different κόσμοι contain different parts—more or less celestial bodies of variable size, different amounts of animal and plant life, different amounts of water (ἐν τισὶ δὲ μὴ εἶναι ἥλιον μηδὲ σελήνην, ἐν τισὶ δὲ μείζω τῶν παρ' ἡμῖν καὶ ἐν τισὶ πλείω ... εἶναι δὲ ἐνίους κόσμους ἐρήμους ζώων καὶ φυτῶν καὶ παντὸς ὕγρου: [d<sub>2</sub>])—perhaps in keeping with the particular atomic material extracted from the boundless extracosmic store by different vortices (φέρεισθαι κατὰ ἀποτομὴν ἐκ τῆς ἀπείρου πολλὰ σώματα παντοῖα τοῖς σχήμασιν: [a<sub>2</sub>]).<sup>18</sup>

### **The Concept of Necessity (ΑΝΑΓΚΗ) in Early Atomism (2.2.1)**

Thus far, the atomist κόσμος consists of three things: atoms, void, and a vortex (which mixes atoms and void to create worlds like the one familiar to the Critical Tradition, worlds in which a central earth is circled by celestial bodies). This raises questions, e.g. *what causes the individual vortex? why is it in one place rather than another, containing some atoms and not others?* The atomists had a simple answer for such questions, an answer that turns up in our cosmological testimonia (as elsewhere):

<sup>17</sup> Remember that Anaximander may have likened the universe to a plant: see note 21 above in chapter 1.

<sup>18</sup> For more on the early atomist cosmology (including insight into controversies not immediately relevant to this discussion), see Mugler (1959), 9-19; Taylor (1999), 160-188.

TEXT ( <i>editor</i> )	TRANSLATION ( <i>Taylor</i> )
(a <sub>3</sub> ) καὶ τὸν μὲν ἥλιον ἐκλείπειν σπανίως, τὴν δὲ σελήνην συνεχῶς, διὰ τὸ ἀνίσους εἶναι τοὺς κύκλους αὐτῶν. εἶναί τε ὥσπερ γενέσεις κόσμου, οὕτω καὶ αὐξήσεις καὶ φθίσεις καὶ φθοράς, κατὰ τινα ἀνάγκην, ἣν ὁποία ἐστὶν <οὐ> <sup>19</sup> διασαφεῖ. ( <i>Marcovich [1999]</i> )	The sun is eclipsed rarely, the moon frequently, because their cycles are unequal. Just like the coming into being of worlds, so do their growth, decay, and destruction occur according to a certain necessity, the nature of which he does not explain.  Leucippus, fr. A1 DK = fr. 77a Taylor = fr. 382 Luria  Diog. 9.33
(b <sub>3</sub> ) συμπλέκεσθαι τὰ ὁμοιοσχήμονα καὶ παραπλήσια τὰς μορφάς ... αὖξιν δὲ καὶ φθίνειν διὰ τὴν ἀνάγκην. ( <i>Luria</i> )	Those [bodies, i.e. atomic compounds] of the same and similar shapes get entangled ... and grow and decay through necessity.  Leucippus, fr. A10 DK = fr. 78 Taylor = fr. 291 Luria  Hippol. <i>Refut.</i> 1.12
(c <sub>3</sub> ) πάντα τε κατ' ἀνάγκην γίνεσθαι, τῆς δίνης αἰτίας οὐσης τῆς γενέσεως πάντων, ἣν ἀνάγκην λέγει. ( <i>Marcovich [1999]</i> )	Everything comes to be by necessity, the swirl, which he calls necessity, being the cause of the coming to be of everything.  Democritus, fr. A1 DK = fr. 6 Taylor = fr. 93, 184, 215, 382 Luria  Diog. 9.44

19 The negative particle (inserted by Stephanus, who is followed by Diels and Luria) comes from a parallel passage in Hippol., *Refut.* 1.12: Λεύκιππος ... τίς δ' ἂν εἴη ἡ ἀνάγκη, οὐ διώρισεν (fr. 16 Luria). It is justified by the widely attested lack of any clear atomist definition of ἀνάγκη that revealed precisely how it produces κόσμοι. See page 122 below.



The ultimate reason for everything in the atomist multiverse (infinite void containing infinite κόσμοι at various stages of evolution) is necessity (πάντα τε κατ' ἀνάγκην γίνεσθαι), which can be identified with the vortex that creates all physical phenomena (τῆς δίνης αἰτίας οὔσης τῆς γενέσεως πάντων, ἣν ἀνάγκην λέγει: [c<sub>3</sub>]). This puts necessity outside the realm of rational understanding: the word ἀνάγκη merely renames the vortex along with all aspects of it that escape easy explanation. Why does something happen? Because it is necessary. What makes it necessary? Necessity, in the form of a vortex, creates the conditions that call it forth. This is circular reasoning.<sup>20</sup> Thus the atomist ἀνάγκη (δίνη) is an absolute ordering principle that resists definitive reduction, similar to the cosmic mind of Anaxagoras, the cosmic love and strife of Empedocles, Parmenidean Being, or Heraclitean war. When the atomists want to talk about what makes things happen everywhere, they invoke necessity the way their predecessors invoked these other things—as ambitious illustrations of reality rather than as definitive explanations of it.

Other testimonia go beyond our cosmological sources in describing how Leucippus and Democritus imagined the world-ordering activity of ἀνάγκη. Consider the following testimonia from the early atomist corpus:

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<sup>20</sup> See Drozdek (2007), 102-104, especially the following: “Necessity is an atomistic, nondivine divinity capable of bringing ordered and harmonious results out of disharmonious clouds of chaotically moving atoms. [Vortices appear of necessity as endless atoms move in the boundless void.] It is a blind force that produces what intelligible divinities of other philosophers brought into being, a force that is stripped of the divine status and yet by terminological *fiat*, brings results that only divinities were able to perform. And because the way it is accomplished is out of reach to the human mind, it is left unanalyzed, obscure, existing but unexplainable” (104).

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
Λεύκιππος πάντα κατ' ἀνάγκην, τὴν δ' αὐτὴν ὑπάρχειν εἰμαρμένην. λέγει γὰρ ἐν τῷ Περὶ νοῦ οὐδὲν χρῆμα ματὴν γίνεται, ἀλλὰ πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης.	Leucippo sostiene che tutto è in virtù della Necessità, e che quest'ultima è il destino. Infatti, nell'opera intitolata <i>Sull'Intelligenza</i> afferma: «nulla avviene invano, ma tutto deriva dalla causa e dalla necessita». ( <i>Luria, Krivushina</i> )  Leucippus, fr. B2 DK = fr. L1 Taylor = fr. 22 Luria  Aet. 1.25.4; Stob. 1.4.7c
Δημόκριτος δὲ τὸ οὗ ἔνεκα ἀφείς λέγειν, πάντα ἀνάγει εἰς ἀνάγκην οἷς χρῆται ἡ φύσις.	Democritus neglects the final cause, reducing all the operations of nature to necessity. ( <i>Taylor</i> )  Democritus, fr. A66 DK = fr. 74a Taylor = fr. 23 Luria  Aristot. <i>De gen. animal.</i> 5.8.789b2
Δημόκριτος [ἔφη οὐσίαν ἀνάγκης εἶναι] τὴν ἀντιτυπίαν καὶ φορὰν καὶ πληγὴν τῆς ὕλης.	Democritus says that it [necessity] is impact and motion and a blow of matter. ( <i>Taylor</i> )  Democritus, fr. A66 DK = fr. 74e Taylor = fr. 25 Luria  Aet. [Plut.] 1.26.2 ( <i>Dox.</i> 321: περὶ οὐσίας ἀνάγκης)

Confirming what we have already noticed, Leucippus (πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης: fr. B2 DK) and Democritus (πάντα ἀνάγει εἰς ἀνάγκην: fr. 23 Luria) both explain everything as a result of necessity. Confirming the portrait of atomic behavior in the cosmological fragments (see [a<sub>1</sub>]-[d<sub>1</sub>], [a<sub>2</sub>]-[c<sub>2</sub>] above), pseudo-Plutarch identifies

Democritean necessity with atomic motion (φορά), including the impact (ἀντιτυπία, πληγή) that occurs when moving atoms collide (fr. 25 Luria).<sup>21</sup> (Note that from the doxographers, especially Aristotle,<sup>22</sup> it appears that the early atomists offered no causal explanation for eternal atomic motion: like atomic shape, order, and orientation, it was just assumed as a constant factor in the eternal flux of the atomist multiverse. So perhaps we should think of atomist necessity as what happens when infinite atomic shapes, orders, orientations, and movements come together in infinite void, i.e. infinite vortices constituting infinite and infinitely varied κόσμοι.) The most problematic new information here comes from Leucippus, who seems to say that nothing happens without reason (οὐδὲν χρήμα ματὴν γίνεται), that all things are determined by a necessity that is in some sense logical (ἀλλὰ πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης: fr. B2 DK). How does this agree with the (irrational) nature of ἀνάγκη as an unconstructed illustration of ultimate reality (see page 118 above)?

With this question we come upon a fundamental human problem: *how do we speak about causality? What are the limits of reason as a tool for illustrating and exploring reality?* The atomists provide no definitive response to these questions, though there is good evidence that they were concerned with them. Democritus in particular is remembered as an authority on αἰτίαι,<sup>23</sup> with the most famous etiological testimonium

21 As the cosmological fragments state, infinite atoms of every shape move about eternally, crashing and coalescing (as shape, order, and orientation allow: see note 11 above) to form compounds making up observable physical phenomena. Necessity somehow determines the results of this process.

22 See fr. 288, 300, 304, 305 Luria = *Phys.* 2.4.196a26, 8.1.250b11; *De caelo* 3.2.300b8, b31. Motion thus joins shape, order, and orientation (see note 11 above) as a permanent attribute of individual atoms. Like order and orientation, it can be changed with circumstances (e.g. atoms collide), unlike shape (which does not change). For more testimonia, see fr. 288-313 Luria.

23 The Thrasyllan list attributes eight books on physical causes to him: 1. Αἰτίαι οὐράνιαι. 2. Αἰτίαι ἀέριοι.

being a Democritean saying preserved by Dionysius of Alexandria (3<sup>rd</sup> cent. CE) and cited by Eusebius of Caesarea:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
Δημόκριτος γοῦν αὐτός, ὥς φασιν, ἔλεγε βούλεσθαι μᾶλλον μίαν εὐρεῖν αἰτιολογίαν ἢ τὴν Περσῶν οἱ βασιλείαν γενέσθαι.	Democritus himself, so they say, said that he would rather discover a single explanation than acquire the kingdom of the Persians.  Democritus, fr. B118 DK = fr. lviii, 29 Luria  Euseb. <i>Praep. Evang.</i> 14.27.4

In light of the Leucippian quotation that joins ἀνάγκη with λόγος (DK67B2), it is tempting to read this Democritean saying (and all other approaches to etiology extant in the atomist corpus)<sup>24</sup> as the expression of a rigid determinist who believed that every event in the atomic multiverse is minutely predetermined by an endless chain of atomic movements (conveniently referred to as ἀνάγκη). If by some miracle the atomist could see all atoms everywhere at any given moment in time—noting their shape, order, orientation, and movement—then he would seemingly be able to foretell every event resulting from their ongoing mutual interaction. This rigid determinist perspective—we

3. Αἰτίαι ἐπίπεδοι. 4. Αἰτίαι περὶ πυρὸς καὶ τῶν ἐν πυρί. 5. Αἰτίαι περὶ φωνῶν. 6. Αἰτίαι περὶ σπερμάτων καὶ φυτῶν καὶ καρπῶν. 7. Αἰτίαι περὶ ζώων α β γ. 8. Αἰτίαι σύμμικτοι (Diog. 9.47 = fr. cxv Luria). While discussing sexual shyness among humans and animals, Aelian refers to him in passing as providing explanations for inexplicable natural phenomena: ταῦτα Δημοκρίτῳ τε καὶ τοῖς ἄλλοις καταλείπωμεν ἐλέγχειν τε καὶ τὰς αἰτίας οἶεσθαι λέγειν ἱκανοῖς ὑπὲρ τῶν ἀτεκμάρτων τε καὶ οὐ συμβλητῶν (*N. a.* 6.60 = fr. 560 Luria). The reputation attested in these sources is born out by several anecdotes in the atomist doxography which preserve Democritean explanations of natural phenomena, e.g. the sweetness of a fig (Plut. *Quaest. conv.* 1.10.2, p. 628c = fr. xxxvii Luria), the budding of milk teeth in infants (Aristot. *De gen. animal.* 5.8.788b9 = fr. 517 Luria), the existence of horns and antlers (Ael. *N. a.* 12.18-20 = fr. 541-543 Luria), the occurrence of multiple births (Ael. *N. a.* 12.16 = fr. 545 Luria), and the birth of monsters with multiple limbs (Aristot. *De gen. animal.* 4.4.769b30, Philopon. 185.33 = fr. 546 Luria).

24 See note 23 above.

might call it *rigid determinism*—appears consonant with certain atomist fragments (e.g. fr. 32 Luria, where Democritus makes τύχη an illusion) and it is certainly assumed by Epicurus when he introduces the unpredictable atomic swerve to account for spontaneity in human thought and action.<sup>25</sup> But it would be a mistake to attribute it to the early atomists without serious reservation.<sup>26</sup>

The confounding variable here is the fact that ancient students of early atomism found no meaningful distinction drawn between atomist necessity (ἀνάγκη) and sheer happenstance (τύχη). This problem appears as early as Aristotle (whose precise theory of causation attempts to correct Critical laxness in this regard),<sup>27</sup> and continues throughout the doxography<sup>28</sup>—including Eusebius *ad locum supra citatum* (where Democritus is mocked for explaining things by denying any definitive explanation: καὶ ταῦτα μάτην καὶ ἀναιτίως αἰτιολογῶν).<sup>29</sup> This is the familiar opacity of atomist necessity, which causes everything somehow without being itself reducible to any easily recognizable rule (see page 118 above). Here we might simply mark this problem (the identity of atomist necessity and its relationship to luck) as insoluble, lamenting the early atomists' lack of

25 See fr. 36a, 38, 39 Luria (= Epicur. Περὶ φύσεως, pap. 1056 ed. Gomperz col. 25; Cic. *De nat. deor.* 1.25.69, *De fato* 10.23; Diog. Oenoand. fr. 32 col. 1 [p. 56 Chilton]) and Lucret. 2.216-293.

26 Sedley recognizes this in Macchiaroli (1983, 32-34), where he suggests that Epicurus was arguing more with Democriteans (e.g. Metrodorus of Chios, Anaxarchus, Nausiphanes) than with Democritus.

27 See e.g. Aristot. *De caelo* 3.2.300b8; *Metaph.* 11.6.1071b26; *Phys.* 2.4.195b36, 196a24 (= fr. 16, 17, 18, 24 Luria).

28 See e.g. fr. 15, 16, 18, 19, 24, 27, 31 Luria, and the discussion in Taylor (1999), 190-191.

29 This criticism opens the remainder of fr. 29 Luria: καὶ ταῦτα μάτην καὶ ἀναιτίως αἰτιολογῶν ὡς ἀπὸ κενῆς ἀρχῆς καὶ ὑποθέσεως πλανωμένης ὁρμώμενος καὶ τὴν ῥίζαν καὶ τὴν κοινὴν ἀνάγκην τῆς τῶν ὄντων φύσεως οὐκ ὀρῶν, σοφίαν δὲ μεγίστην ἡγούμενος τὴν τῶν ἀσόφως καὶ ἡλιθίως συμβαινόντων κατανόησιν, καὶ τὴν τύχην τῶν μὲν καθόλου καὶ τῶν θεῶν δέσποιναν ἐφιστὰς καὶ βασιλίδαν, καὶ πάντα γενέσθαι κατ' αὐτὴν ἀποφαινόμενος, τοῦ δὲ τῶν ἀνθρώπων αὐτὴν ἀποκηρύττων βίου καὶ τοῦς πρεσβεύοντας αὐτὴν ἐλέγχων ἀγνώμονας (Euseb. *Praep. Evang.* 14.27.4).

clarity (which we might then blame on lack of extant texts, lack of sympathetic ancient readers, and/or simple incompetence on the part of Leucippus and Democritus). This would be premature, however, since it would require us to ignore important clues that we do have about the atomists' understanding of their own worldview. First of these clues is the description of τύχη that Dionysius (Eusebius' source) and Stobaeus place in the mouth of Democritus:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
τῶν γοῦν Ὑποθηκῶν ἀρχόμενος λέγει· «ἄνθρωποι τύχης εἶδωλον ἐπλάσαντο πρόφασιν ἰδίης ἀνοίης». φύσει γὰρ γνώμη τύχη μάχεται· καὶ τὴν ἐχθίστην τῇ φρονήσει ταύτην αὐτὴν ἔφασαν κρατεῖν· μᾶλλον δὲ καὶ ταύτην ἄρδην ἀναιροῦντες καὶ ἀφανίζοντες ἐκείνην ἀντικαθιστᾶσιν αὐτῆς· οὐ γὰρ εὐτυχῇ τὴν φρόνησιν, ἀλλ' ἐμφρονεστάτην ὕμνοῦσι τὴν τύχην.	En tout cas, au début de ses <i>Proverbes</i> , il dit: «Les hommes se sont façonné une image de la fortune pour couvrir leur propre folie»; car il y a une lutte naturelle de la fortune contre la raison; et c'est cette ennemie jurée de l'intelligence qu'ils en font triompher, ou plutôt, en supprimant, en anéantissant radicalement l'une, ils mettent l'autre à sa place: ils ne célèbrent pas, en effet, la fortune de l'intelligence, mais l'extrême intelligence de la fortune ( <i>des Places</i> )  Democritus, fr. B119 DK = fr. D29 Taylor = fr. 32 Luria  Euseb. <i>Praep. Evang.</i> 14.27.5
ἄνθρωποι τύχης εἶδωλον ἐπλάσαντο πρόφασιν ἰδίης ἀβουλίας. βαιὰ γὰρ φρονήσει τύχη μάχεται, τὰ δὲ πλεῖστα ἐν βίῳ εὐξύνετος ὀξυδερκεῖη κατιθύνει.	People fashioned an image of fortune as an excuse for their own folly. For in a few cases fortune conflicts with prudence, but most things in life intelligent clear-sightedness keeps straight. ( <i>Taylor</i> )  Democritus, fr. B119 DK = fr. D29 Taylor

	= fr. 32 Luria
	Stob. 2.8.16

According to both sources, Democritus treats τύχη as an image (εἶδωλον) that humans created (ἐπλάσαντο) to cover their lack of understanding (ἀνοίη, ἀβουλίη), i.e. a convenient word for *that which we do not understand*. Since ἀνάγκη too escapes understanding (as we have seen), this does not differentiate it decisively from τύχη: both words refer to what is unknown to man (an indefinite variable, e.g.  $x$  or  $y$  in modern algebraic notation). That said, there is a significant difference in the way these two words appear in the early atomists' writing (as extant). Briefly, Democritus uses τύχη (here in fr. 32 Luria as elsewhere) to indicate the chaotic, irregular process whereby something unexpected happens to people who are naïve, unsuspecting, and uncomprehending ( $x$ ).<sup>30</sup> In contrast, ἀνάγκη designates the more or less regular physical process that generates all things, a process about which we are not necessarily entirely naïve: we can know more or less about it even if we cannot understand it perfectly ( $y$ ).<sup>31</sup> As used by the early atomists, then, τύχη designates an unknown quantity that is fundamentally unknowable ( $x$ ), since it varies wildly with individual experience and opinion, while ἀνάγκη refers to an unknown quantity that we can know something about through thoughtful investigation ( $y$ ), because

30 See fr. 32 Luria (quoted above on page 123), 33a Luria (τύχη μεγαλόδωρος, ἀλλ' ἀβέβαιος, φύσις δὲ αὐτάρκης· διόπερ νικᾷ τῷ ἥσσονι καὶ βεβαίῳ τὸ μείζον τῆς ἐλπίδος: Stob. 2.9.5), 33b Luria (τόλμα πρήξιος ἀρχή, τύχη δὲ τέλος κυρίη: Stob. 4.10.28), and 737 Luria (τὸν εὐθυμεῖσθαι μέλλοντα χρή ... μηδὲ ... ὑπὲρ τε δύναμιν αἰρεῖσθαι τὴν ἐωτοῦ καὶ φύσιν· ἀλλὰ τοσαύτην ἔχειν φυλακὴν, ὥστε καὶ τῆς τύχης ἐπιβαλ-λούσης καὶ ἐς τὸ πλεον ὑπηγεομένης τῷ δοκεῖν, κατατίθεσθαι, καὶ μὴ πλέω προσάπτεσθαι τῶν δυνατῶν: Stob. 4.39.25).

31 The atomists demand a stance like this when they assert that all things happen by necessity and then try to offer an account (or accounts) of how this comes about. If necessity were entirely intractable to theoretical examination, it would be pointless to compose theory about it.

it has λόγος (πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης: DK67B2). At issue here is precisely how regular the unknown ( $y$ ) imagined as ἀνάγκη is relative to the unknown ( $x$ ) imagined as τύχη. Is it fair for Aristotle and others to reduce the atomists' necessity to mere luck ( $x = y$ )?

There are several testimonia which suggest that a meaningful distinction between ἀνάγκη and τύχη did exist in early atomist (or at least Democritean) thought, even if that distinction is ultimately not as strong as Aristotle (or others with a taste for deductive logical precision) would like. Consider the following:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
λέγω τάδε περὶ τῶν ζυμπάντων· ἄνθρωπός ἐστιν ὃ πάντες ἴδμεν	This I say about everything: man is what we all know. ( <i>Taylor</i> )  Democritus, fr. B165 DK = fr. D4-5 Taylor = fr. 9, 58, 65, 102 Luria  Sext. <i>Adv. math.</i> 7.265; <i>Pyrrh. Hypot.</i> 2.23; <i>Aristot. De part. anim.</i> 1.1.640b29; <i>Phys.</i> 2.1.193a3; <i>Mich. Ephes.</i> 5.35; <i>Cic. Acad. priora</i> 2.23.73
Δημόκριτος ὁ Ἀβδηρίτης ... διαιρεῖ δὲ τὰ ὄντα εἰς τὸ εἶναι ἢ ἐξ ἀνάγκης εἶναι, ὡς «τὸν ἄνθρωπον ζῶιον εἶναι». ὁ γὰρ παντί τε καὶ ἀεὶ ὑπάρχει, τοῦτο ἐξ ἀνάγκης ἐστὶν [ὁμοίως ἀναγκαῖον καὶ τὸ τὸν θεὸν ἄφθαρτον εἶναι]. τὰ δὲ ἐνδεχομένως, καὶ τούτων τῶν ἐνδεχομένων τὰ μὲν ὡς ἐπὶ τὸ πλεῖστον, ὡς τὸ τὸν ἄνθρωπον πενταδάκτυλον εἶναι καὶ γηράσκοντα πολιοῦσθαι, τὰ δὲ ἐπ' ἑλαττον, ὡς τὰ τούτοις ἀντικείμενα, τὸ τὸν ἄνθρωπον τετραδάκτυλον ἢ ἑξαδάκτυλον εἶναι (ἔστι γὰρ ἐν τούτοις οὕτως καὶ ταῦτα) ἢ τὸ μὴ πολιοῦ-	Democrito di Abdera ... divide tutto l'esistente in ciò che «esiste» e in ciò che «esiste in forza della necessità», come, per esempio, «l'uomo, che è un essere vivente». In fatti, tutto ciò che esiste sempre e in tutti i casi esiste in forza della necessità (è analogamente necessario anche il fatto che Dio sia immortale). Le altre cose esistono come probabili; e, tra queste, ve ne sono alcune che si danno nel maggior numero dei casi, come, per esempio, il fatto che l'uomo possiede cinque dita o che diventa canuto man mano che invecchia; mentre le



σθαι γηρῶντα τὸν ἄνθρωπον, <τὰ δὲ ἐπ' ἴσης ὡς τὸ πολιτευέσθαι τὸν ἄνθρωπον> ἢ μή, ἀποδημεῖν <ἢ μ>ή, λούεσθαι ἢ μή.	<p>altre si danno nella minoranza dei casi, come, per esempio, le cose contrarie alle precedenti, come l'averne quattro o sei ditta (in questi casi sussistono tutte e due le possibilità), oppure il non diventare canuti man mano che si invecchia. Ancora altre (<i>possono esserci e non esserci</i>) in eguale misura, come, per esempio, il fatto che l'uomo si occupi degli affari pubblici oppure no, si trasferisca in un'altra città oppure no, si lavi oppure no. (<i>Luria, Krivushina</i>)</p> <p>Democritus, fr. 103 Luria</p> <p>Suda, s.v. ἀναγκαῖον, suppl. uncis angulatis ap. Alex. in <i>Top.</i> 177.19</p>
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These fragments are difficult to interpret. But following the persuasive insight of Mourelatos (2003), both appear to approach phenomena with the intent of separating the general from the particular: the word ἄνθρωπος refers to what is common to all men (ὁ πάντες ἴδμεν [fr. B165 DK]; τὸν ἄνθρωπον ζῶιον εἶναι [fr. 103 Luria]), a shared standard to which individual ἄνθρωποι add some variation (e.g. not every man has five fingers per hand or goes gray with age, even though most do [fr. 103 Luria]). Thus our working concept of the general (e.g. Democritus' ἄνθρωπος) remains unclear and unfixed, since it is liable to change every time we make a particular observation: if we failed to meet any men with eight or twelve fingers (ἔστι γὰρ ἐν τούτοις οὕτως καὶ ταῦτα: fr. 103 Luria), then we might assume that having ten fingers is a general rule defining Democritus' ἄνθρωπος, when in fact this trait is merely a common variation.<sup>32</sup> The

<sup>32</sup> A more thorough discussion of the Democritean distinction between general and particular is given by Mourelatos (2003), who cites additional fragments that parse the relationship between generic

distinction between general and particular in Democritean thought creates a new perspective on early atomist ἀνάγκη. Consider the following famous fragment:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
<p>παλαιὰ ... δόξα περὶ τοῦ τὰ ὅμοια τῶν ὁμοίων εἶναι γνωριστικά ... ἀλλ' ὁ μὲν Δημόκριτος ἐπὶ τε τῶν ἐμψύχων καὶ ἀψύχων ἴστησι τὸν λόγον. «καὶ γὰρ ζῶια, φησὶν, ὁμογενέσι ζώοις συναγελάζεται ὡς περισσότεραι περισσότεραις καὶ γέρανοι γεράνοις καὶ ἐπὶ τῶν ἄλλων ἀλόγων ὡσαύτως. &lt;ὡσαύτως&gt; δὲ καὶ ἐπὶ τῶν ἀψύχων, καθάπερ ὄραν πάρεστιν ἐπὶ τε τῶν κοσκινευομένων σπερμάτων καὶ ἐπὶ τῶν παρὰ ταῖς κυματογαῖς ψηφίδων· ὅπου μὲν γὰρ κατὰ τὸν τοῦ κοσκίνου δῖνον διακριτικῶς φακοὶ μετὰ φακῶν τάσσονται καὶ κριθαὶ μετὰ κριθῶν καὶ πυροὶ μετὰ πυρῶν, ὅπου δὲ κατὰ τὴν τοῦ κύματος κίνησιν αἱ μὲν ἐπιμήκεις ψηφίδες εἰς τὸν αὐτὸν τόπον ταῖς ἐπιμήκεσιν ὠθοῦνται, αἱ δὲ περιφερεῖς ταῖς περιφερέσιν ὡς ἂν συναγωγόν τι ἐχούσης τῶν πραγμάτων τῆς ἐν τούτοις ὁμοιότητος».</p>	<p>There is an ancient opinion that like things are recognized by like. Democritus seemed to have devised some considerations in support of this opinion ... he based his argument on the behaviour of living and non-living things. For “Animals flock together,” he says, “with animals of the same kind, doves with doves and cranes with cranes and similarly with the other irrational creatures, and so with non-living things too, as one can see in the case of seeds in a sieve and pebbles on a beach. In the one lentils are sorted out by the swirl of the sieve to lie together with lentils, barley with barley, and wheat with wheat, and in the other oblong pebbles are pushed by the motion of the waves into the same place as oblong and round into the same place of round, as if that sort of similarity in things had a kind of attractive force.”</p> <p>Democritus, fr. B164 DK</p>

humanity and individual human beings: ἐκκρίνεται τὸ σπέρμα ὡς περ Πλάτων φησὶ καὶ Διοκλῆς, ἀπὸ ἐγκεφάλου καὶ νωτιαίου· Πραξαγόρας δὲ καὶ Δημόκριτος ἔτι τε Ἱπποκράτης ἐξ ὅλου τοῦ σώματος, ὁ μὲν Δημόκριτος λέγων «ἄνθρωποι εἰς ἔσται καὶ ἄνθρωπος παντός» (Galen. *De defin. med.* 439 = fr. B124 DK, 525 Luria); Ξυνουσίη ἀποπληξίη σμικρὴ ἐξέσσεται γὰρ ἄνθρωπος ἐξ ἀνθρώπου καὶ ἀποσπᾶται πληγῇ τινι μεριζόμενος (Clem. *Paed.* 1.94, Hippol. *Refut.* 8.14, Galen. *in Hippocrat.* 3.1, Galen. *De defin. med.* 439, [Galen.] *An animal sit id quod in utero est* 19.176, Plin. *N. h.* 28.58, Gell. *Noct. Att.* 19.2, Stob. 3.6.28, Plut. *Quaest. conv.* 3.6.1 = fr. B32 DK, 527 Luria). Mourelatos ultimately concludes that for Democritus, “knowledge of man (type) [generic ἄνθρωπος] is complete, unrestricted, and public; knowledge of men (tokens) [individual ἄνθρωποι] is inevitably incomplete, restricted, and parochial” (53). While the thrust of this conclusion (recognizing a more or less regular generic type that is larger than its individual instances) is undoubtedly correct, it seems a little too positive regarding our knowledge of the general: since this depends necessarily on knowledge of the particular, it is hard to justify its being complete (thus Mourelatos) or perfect when the knowledge that it depends on is necessarily incomplete (imperfect). See fr. 79-80 Luria, where the imperfect knowledge of the senses (which deal in particulars) limit the power of the mind (which deals with what is generally true, generalizing from particulars).

	= fr. D6 Taylor = fr. 316 Luria  Sext. <i>Adv. math.</i> 7.116
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According to this fragment, many different phenomena (herds of animals, seeds in a sieve, rocks on a beach) are results of a natural sorting process. This sorting process regularly places like with like, putting animals, seeds, and stones together in groups defined by mutual resemblance. The existence of general likeness among animals, seeds, and stones does not preclude infinite idiosyncrasies in particular instances (not just of the individual but also of the group: the animals and plants in one country differ from those in another, and different beaches are strewn with different rocks).<sup>33</sup> Because we cannot see every particular instance where this sorting process plays out, we cannot define it absolutely (just as we cannot define Democritus' ἄνθρωπος). The most we can do is offer a tentative description that illustrates the regularity we observe without closing our minds to the likelihood that some of it is not absolute. In other words, we have to remain open to the possibility of men with more or less than five fingers per hand.

What are we to call the sorting process that mysteriously places like with like? From the perspective of the early atomists, this question can only be answered in context. If we are thinking about reality that we have observed and pondered carefully, noting where it is more predictable and where it is less, we call the sorting process ἀνάγκη (or vortex, e.g. δῖνος in fr. 316 Luria).<sup>34</sup> If we are thinking about reality that we have not

<sup>33</sup> Living in an age of geographic exploration and increasing cultural interchange, the atomists would have been acutely aware of these kind of differences: see chapter 1.3 above.

<sup>34</sup> It is difficult to tell precisely what word(s) other than ἀνάγκη Democritus (let alone the barely extant Leucippus) used to refer to the vortex: fr. DK68B164 and B167 (= fr. 316, 288 Luria) put the word

observed or pondered, we call the sorting process *τύχη*.<sup>35</sup> In either case, what changes is not what happens, but how we orient ourselves as active observers. In one case, we are playing Russian roulette with a gun that we have examined carefully and maybe even doctored beforehand. In the other, someone else pulls the trigger before we notice that the game is on and we are in play. Assuming that Democritus is reliable translator, the deontic *λόγος* of Leucippus (DK67B2) thus appears to have more in common with the universal *λόγος* of Heraclitus (fr. 1, 23a Marcovich, quoted on pages 47-48 in chapter 1) than with the syllogistic logic of Aristotle. It is a tool for thinking inductively rather than deductively, and the necessity (*ἀνάγκη*, *δῖνος*) that it construes is an unclear, generic principle that cannot be precisely defined by any limited set of particulars (since the set of particulars that it deals with, namely all things, is infinite).<sup>36</sup> This explains why Aristotle and others who think deductively find it unsettling and complain that there is no categorical distinction between necessity and happenstance (see page 122 above). They want the atomists to be more explicit and definitive about the relationship between the general and the particular than the atomists themselves (as far as we can tell) appear to have been (possibly with good reason). They want axioms and proofs when all the atomists have are observations and more or less plausible explanations.

Where does this leave early atomist understanding of causality? The early

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*δῖνος* in Democritus' mouth, and doxographers close to Democritean texts use the Ionian word *δίνη* (e.g. Aristot. *Phys.* 2.4.196a26, Sext. *Adv. math.* 9.113 = fr. 288, 290 Luria). Both words (*δῖνος*, *δίνη*) were extant in the fifth century with the meaning *vortex*, *eddy*, *whirl*, *rotation* (see LSJ s.v.). I have tentatively decided to accept the attribution of *δῖνος* to Democritus.

35 See note 30 above, where all extant early atomist usages of the word are gathered.

36 While I am not prepared to follow Luria (1970, 1012-1014) in making Democritus the founder of inductive logic, I agree that he represents an instance of it that predates Aristotle.

atomists appear to accept the human intuition that cause and effect exist, sharing a relationship in which the one is in some sense prior to the other. However, they do not pretend to understand that relationship minutely or precisely (as far as we can tell). In light of fr. 316 Luria, the principle of homogeneity by which atomist necessity operates<sup>37</sup> does not seem to allow the degree of precision demanded by rigid determinism (as discussed above on page 121): we have no reason to suppose that Democritus thought that knowing the general truth that similar animals, seeds, and stones gather together would allow him to predict precisely where particular animals, seeds, or stones of a kind would stand relative to one another in a specific situation (e.g. in a particular instance of the general phenomenon that he calls ἀνάγκη or δῖνος). Like pebbles (or atoms) will always group with like as a general rule, but the particular pebble patterns on an individual beach (like the particular atomic structures that exist and interact at any given moment in an individual κόσμος) are not minutely predictable. Every pebble-strewn beach constitutes a particular (and to some extent random) variation on the general and universal rule, just as every κόσμος does.

Remember the different atomist κόσμοι mentioned in [d<sub>2</sub>] above (see pages 114 and 116): as imagined by Democritus (assuming Hippolytus to be a reliable witness), these show considerable and indefinite variation (1) in the number of celestial bodies, (2) in the amount of animal life, and (3) in the amount of water present. Thus, experience

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37 Note that this principle appears throughout the atomist corpus—e.g. frs. 315, 318, 319, 320, 321 Luria, in which atoms come together and influence one another by likeness (separating from one another by unlikeness, which makes it difficult for them to associate or interact at length). Fr. 316 provides the most explicit explanation of how the atomists envisaged this principle working.

with the particular (individual human beings, individual pebble-strewn beaches, the Greek world-order) provides atomists with insight into the general (Democritean man, the generic beach, the generic world), insight which has to be flexible enough to cope with unexpected (and fundamentally unpredictable) instances of the particular (men who lack or add fingers, beaches with different pebble patterns, worlds with different celestial and terrestrial phenomena). Some things appear less random than others (e.g. most men have ten fingers), but rigid determinism seems impossible, since individual instances of the particular escape minute, precise prediction.

The foregoing does not mean that the early atomists were not determinists, only that their determinism was not necessarily as strict or absolute as a cursory reading of Aristotelian or Epicurean criticism of it might suggest.<sup>38</sup> Read on their own terms, Leucippus and Democritus seem to have believed (1) that cause and effect are real,<sup>39</sup> (2) that they occur at a dimension too small to be perceived easily (i.e. at the level of individually imperceptible atoms), and thus (3) that it is hard to see how causation really

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38 Aristotle (see note 27 above) has the atomists reducing everything to sheer happenstance (his reading of τύχη), while Epicurus (see note 25 above) has them reducing everything to rigid determinism (his reading of ἀνάγκη without the formal addition of a random atomic swerve). I think the truth lies between these reductionist polemics, with Epicurus formalizing (in the swerve) an idea of randomness already nascent in Democritus (certainly) and Leucippus (arguably: see Taylor [1999], 189-190).

39 See fr. 22-31 Luria, esp. fr. 22 (= Aet. 1.25.4; Stob. 1.4.7c), where the meaning of οὐδὲν χρῆμα ματὴν γίνεται seems to be that no event occurs without proximate cause (and ensuing effect): this does not mean that every event is minutely predictable (supposing an observer with the insight of Anaxagoras' cosmic mind), since the principle of like-with-like does not demand this. That principle tells you only that shaking different seeds in a sieve will sort like with like (fr. 316 Luria), not what precise patterns each group will make during the process: chances are, if you repeatedly mix and sort the same collection of different seeds, you will get slightly different patterns each time (particular variations on the general rule that like always goes with like). See also the discussion of the Principle of Sufficient Reason in Taylor (1999): "No event occurs, or state of affairs obtains, unless there is a sufficient reason for its occurrence or obtaining" (162). Taylor finds this idea implicit in early atomism (e.g. in fr. 45, 80c, 80d Taylor).

works (i.e. precisely how eternal atomic movement creates cascading chains of accretion and disjunction). Every cause and effect exist as a complex interaction between multiple moving parts (atoms and groups of atoms) whose generic guiding principle (like-with-like, ἀνάγκη, δῖνος) allows considerable leeway in particular instances to what we might fairly call luck or chance (τύχη)—even if Democritus ultimately sees the determinative role of randomness as less than many of his contemporaries thought.<sup>40</sup> Thus Democritus likens discovering a single true etiology to being the Great King (fr. B118 DK, quoted above on page 121): it is humanly possible, but rare. And when the atomist talks about reality, he puts it outside easy reach of the human mind, in the infinite void where imperceptible particles move together and apart for reasons that we cannot fathom perfectly in particular instances (even if we can use repeated instances of the particular to draw broad inferences with general validity):

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
«ἐτεῆι δὲ οὐδὲν ἴδμεν· ἐν βυθῶι γὰρ ἡ ἀλήθεια».	In reality we know nothing; for truth is in the depths.  Democritus, fr. B117 DK; 51 Luria = fr. D15, 179b Taylor  Diog. 9.72; Cic. <i>Acad. priora</i> 2.10.32; Lact. <i>Epit. div. inst.</i> 40, <i>Inst.</i> 3.28.13, <i>Inst.</i> 3.30.6; Honor. Augustodun. ( <i>PL</i> 172: 235); Isidor. <i>Hisp. Etym.</i> 8.6.12 (= Raban. Maur. <i>De universo</i> 15.1, <i>PL</i> 111: 414).

<sup>40</sup> βαιὰ γὰρ φρονήσει τύχη μάχεται, τὰ δὲ πλεῖστα ἐν βίῳ εὐξύνετος ὁξυδερκεῖη κατιθύνει (Stob. 2.8.16 = fr. 32 Luria, quoted above on page 123).

The only things that exist absolutely are atoms (material) and void (non-material whose emptiness allows the material to move):

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
Δημόκριτος ... «νόμωι» γάρ φησι «γλυκύ, [καὶ] νόμωι πικρόν, νόμωι θερμόν, νόμωι ψυχρόν, νόμωι χροίη, ἔτεῃ δὲ ἄτομα καὶ κενόν» (ὅπερ <ἔστι> νομίζεται μὲν εἶναι καὶ δοξάζεται τὰ αἰσθητά, οὐκ ἔστι δὲ κατ' ἀλήθειαν ταῦτα, ἀλλὰ τὰ ἄτομα μόνον καὶ τὸ κενόν).	For he says, “By convention sweet and by convention bitter, by convention hot, by convention cold, by convention colour; but in reality atoms and void.” That is to say, the sensible qualities are conventionally considered and thought to exist, but in reality they do not exist, but only atoms and void.  Democritus, fr. B9 DK = fr. 179a Taylor = fr. 55 Luria  Sext. <i>Adv. math.</i> 7.135
Δημόκριτος ... «νόμωι χροίη, νόμωι γλυκύ, νόμωι πικρόν», εἰπών, «ἔτεῃ δὲ ἄτομα καὶ κενόν» ...	“By convention colour, by convention sweet, by convention bitter, but in reality atoms and void” ...  Democritus, fr. B125 DK = fr. 179c Taylor = fr. 79 Luria  Galen. <i>De medica exper.</i> 1259.8
«νόμωι γάρ χροίη, νόμωι γλυκύ, νόμωι πικρόν, ἔτεῃ δ' ἄτομα καὶ κενόν» ὁ Δημόκριτος φησιν ...	“For by convention colour, by convention sweet, by convention bitter, but in reality atoms and void,” says Democritus ...  Democritus, fr. A49 DK = fr. 179d Taylor = fr. 90 Luria  Galen. <i>De elem. sec. Hipp.</i> 1.2



<p>Δημόκριτος δὲ τὰς ποιότητας ἐκβάλλων, ἵνα φησὶ «νόμῳ θερμόν, νόμῳ ψυχρόν, ἔτεῃ δὲ ἄτομα καὶ κενόν» ...</p>	<p>Democritus, getting rid of qualities, where he says, “By convention hot, by convention cold, but in reality atoms and void” ...</p> <p>Democritus, fr. B117 DK = fr. D15, 179b Taylor = fr. 51 Luria</p> <p>Diog. 9.72</p>
<p>δοκεῖ δὲ αὐτῷ (sc. Δημοκρίτῳ) τάδε· ἀρχὰς εἶναι τῶν ὅλων ἁτόμους καὶ κενόν, τὰ δὲ ἄλλα πάντα νενομίσθαι.</p>	<p>His doctrines are as follows. The principles of everything are atoms and void, and everything else is conventional.</p> <p>Democritus, fr. A1 DK = fr. 6 Taylor = fr. 93, 382 Luria</p> <p>Diog. 9.44<sup>41</sup></p>

From repeated experience with particular instances of material and non-material (atoms and void), people generalize to create material qualities like color, taste (bitter and sweet), and temperature (hot and cold). The most general qualities of all are those characterizing the entire data set defined by infinite atoms and void. Depending on where the atomist stands relative to the totality of atoms and void, he might qualify this totality generally as regular or irregular: either way, the regularity must admit some randomness (since he cannot predict particular instances of atomic behavior), and the irregularity must show some order (since causation is real for him, and he sees like going with like in every particular instance of atomic behavior of which he is aware). In the final analysis, then, Aristotle's criticism that the early atomists confused necessity and luck (see page 122 above) rings true to some degree, since the atomists do not use words like ἀνάγκη and

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<sup>41</sup> In addition to these sources, see fr. 92, 94, 95 Luria.

τύχη as absolute definitions: they are merely artificial conventions (see fr. 563 Luria on the arbitrary nature of words) naming artificial conventions (the imagined quality or qualities that characterize all atoms and void individually and collectively in the atomist multiverse). As open-ended descriptions, they are vulnerable to one another (and to the external material reality that both refer to): ἀνάγκη cannot exclude all randomness without missing the six-fingered man (vel sim.), and τύχη cannot exclude all order without denying causation and the principle of like with like. Thus atomic necessity is orderly (like with like, causation) but in some sense random (since certain aspects of particular experiences are irreducibly unpredictable), and atomic happenstance is random (since it is unexpected), but in some sense orderly (since it occurs in a situation where causation obtains and like goes with like).

The clearest early atomist differentiation between necessity and luck is rhetorical: the early atomists talk of necessity (ἀνάγκη) or vortex (δῖνος) when discussing all phenomena (the whole),<sup>42</sup> of luck (τύχη) when discussing human orientation toward phenomena (part of the whole).<sup>43</sup> Judging from extant testimonia, the most promising point of cleavage here is the distinction between general and particular, with necessity being a general characteristic of atoms and void and luck a particular one. After many particular experiences with luck, one begins to notice that it is not generally as random as at first it appears: this leads eventually to a general idea of probability that one can use to inform one's understanding of the particular, e.g. observations (a) that like goes with like

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42 See page 118 above.

43 See note 30 above.

or (b) that most men have five fingers on each hand. Weighing probabilities intelligently shifts the boundaries of randomness significantly (see page 129 above), but it does not erase them or make understanding causation a simple matter of calculation.<sup>44</sup>

The foregoing section (2.2.1) can be summarized as follows. Early atomists believed that all reality is reducible to atoms and void, which interact to produce all phenomena. Interaction between atoms and void is assumed to be regular in some way (e.g. like seeks like),<sup>45</sup> and that regularity is called necessity (ἀνάγκη) or vortex (δῖνος). Doxographers disagree on the nature of atomist necessity: some, like Aristotle, take it to be the same thing as luck (i.e. wholly random); others, like Epicurus, identify it with fate (the precise opposite of random). An exhaustive reading of all extant testimonia suggests that the truth lies between these extremes: early atomist necessity was generally regular (validating Epicurus) without being particularly or definably so (validating Aristotle). In other words, the early atomists use the word ἀνάγκη to refer generally to whatever it is that produces monotonous regularity in some particular phenomena (e.g. the movement of the fixed stars, the sorting of like with like) and occasional irregularity in others (e.g. the number of fingers on a human hand, the particular position that like things take

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44 Thus in Stob. 2.8.16 (= fr. 32 Luria, quoted on page 123 above), τύχη retains some indelible influence in human affairs in spite of the (greater) power of ὀξυδεκείη.

45 The inquiry in Taylor (1999, 193-195), more minute than our purpose requires, finds multiple regular expressions (e.g. like seeks like) emerging from interaction between atoms and void: “We have, then, some evidence that Democritus’ dynamics postulated three fundamental forces, a repulsive force [fr. 44a Taylor] which plays the role of impact in a conventional corpuscular theory and two kinds of attractive force, one which draws together atoms of the same shape [fr. D6, 45, 77a, 78, 124, 103, 160 Taylor] and another which holds together atoms of different shapes in an atomic aggregate [fr. 44a, 113 Taylor]. There is also some rather vague evidence to suggest that atoms may have been conceived as having an internal source of mobility [fr. 44a, 67b, 113, 178c Taylor]. It is plausible that Democritus applied the term ‘necessity’ to all these forces, regarding them alike as irresistible” (194-195).

relative to one another in any given instance). This *whatever-it-is* is presumably an emergent characteristic<sup>46</sup> of atoms and void (the only objective realities recognized by the early atomists), i.e. something arising from their mutual interaction. Its contours are not precisely knowable in the particular, since new instances of the particular are constantly occurring (given that atoms and void are infinite), but rough sketches of it (subject to revision) can be drawn from multiple particular instances. (We can have a generally accurate idea of man, even if we fail to observe that certain traits are not as universal among men as they might seem, e.g. having ten fingers.)

We might call this compromising reconstruction of early atomist necessity *supple determinism*, since it has material reality being determined (by the properties that emerge when atoms and void interact, i.e. necessity) but does not construe that determination to exclude randomness entirely (since particular instances of atomic necessity demonstrate spontaneous variation that can be observed but not minutely predicted or explained in terms of linear causation, e.g. the variation in human beings, in different piles of pebbles or seeds, and in the various worlds imagined as existing parallel to the Ionian).<sup>47</sup>

### **Defending Supple Determinism (2.2.2)**

Lack of clear, unequivocal testimony about the nature of early atomist necessity is the greatest obstacle to our understanding, and thus the greatest cause to be skeptical of

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<sup>46</sup> Or series of characteristics: see note 45 above.

<sup>47</sup> This understanding of early atomist necessity (and causality) agrees with Morel (1996), e.g. «l' étiologie de Démocrite n'est donc pas une branche déséquilibrée de la physique, mais son prolongement naturel, vers les phénomènes réguliers ou exceptionnels, par opposition aux principes et aux phénomènes en droit possibles» (462); «Démocrite ... n'est pas totalement réductionniste» (463); «Démocrite adopte à la fois une théorie de type réductionniste et une conception complexe de la causalité. Il tient des positions sceptiques tout en promettant de parler de toutes choses» (470).

any overly explicit reconstruction of that necessity (such as *supple determinism* might appear to be). Different fragments offer different perspectives on necessity, perspectives that are necessarily disintegrated (owing to the fragmentary nature of our evidence) even if they are compatible. The following section addresses some of the discontinuities apparent in the fragments and clarifies the view of them taken by this study, showing how *supple determinism* offers a viable interpretation of our admittedly imperfect evidence.

(a) One problematic datum is fr. 103 Luria (quoted on page 125 above), which figures prominently in the case offered for *supple determinism* above in section 2.2.1. This fragment seems to complicate the construction of early atomist necessity in a way that we do not find explicit elsewhere (see e.g. fr. 22, 23, 291, 382 Luria, quoted above on pages 117 and 119). Whereas many testimonia make necessity the unconstructed reason for everything,<sup>48</sup> fr. 103 Luria separates everything that happens into (1) things that happen by necessity (ὃ γὰρ παντί τε καὶ αἰεὶ ὑπάρχει, τοῦτο ἐξ ἀνάγκης ἐστίν), and (2) things whose occurrence is a matter of probability (τὰ δὲ ἐνδεχομένως: Suda, s.v. ἀναγκαῖον). When we consider that this odd parsing of phenomena (which might seem to demote necessity from its well-attested role as universal cause) comes from the Suda (10<sup>th</sup> cent. CE), it is tempting to see it as tainted (at least potentially) by later discussions of fate and free will (ideas important to Stoics and Epicureans, among others).<sup>49</sup> Still, though it is impossible to prove that fr. 103 Luria does not incorporate later thought, there

48 See note 133 above, which quotes Hippol., *Refut.* 1.12: Λεύκιππος ... τίς δ' ἂν εἴη ἡ ἀνάγκη, οὐ διώρισεν (fr. 16 Luria).

49 Though the fragment lacks any obvious smoking gun connecting it with non-atomist philosophy. The only anomaly is a pious sentence that Luria (1970) brackets as a Late Antique interpolation (1008): ὁμοίως ἀναγκαῖον καὶ τὸ τὸν θεὸν ἄφθαρτον εἶναι (fr. 103 Luria).

are good reasons not to dismiss it entirely as a window into genuine Democritean ideas.

In the first place, fr. 103 Luria is not the only early atomist fragment that problematizes an entirely unconstructed reading of early atomist necessity: it is merely one of several witnesses suggesting that the early atomists tried to break into the black box (see page 118 above) out of which their multiverse emerges.<sup>50</sup> Among testimonia already examined, fr. 382 Luria (quoted above on page 117) identifies Democritean necessity with vortex, and fr. 316 Luria (quoted above on pages 127-131) illustrates what occurs *in vortice*: like material goes with like (ὡς ἂν συναγωγόν τι ἐχούσης τῶν πραγμάτων τῆς ἐν τούτοις ὁμοιότητος: Sext. *Adv. math.* 7.116). Other fragments confirm this principle,<sup>51</sup> and show it producing infinite κόσμοι that vary indefinitely among themselves (e.g. DK68A40, quoted above on page 114 and discussed on pages 116 and 130). This is consistent with the portrait of human beings in fr. 103 Luria, which is one of several witnesses that Democritus imagined individual human beings as particular instances of a universal type (e.g. frs. B32, B124, and B165 DK = frs. 527, 525, 9, 58, 65, and 102 Luria), i.e. as recurring products of vortex that are as likely to show variation as different κόσμοι (which are also produced by vortex).<sup>52</sup> In other words, even if we did

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50 See notes 11, 22, and 45 above for more fragments which document early atomist attempts to identify principles (e.g. the existence of fundamental characteristics of the individual atom: shape, order, and orientation) and rules (e.g. like seeks like) that apply generally and particularly (integrating a more or less coherent idea of material necessity).

51 See frs. 45, 77a, 78, 124, 103, and 160 Taylor.

52 See note 32 above. Note also the tradition that Democritus called the human being a μικρὸς κόσμος (fr. 9-12a Luria). Some dismiss this as a late interpolation, e.g. Finkelburg (1998, 120-121), but Aristotle mentions the idea that the animal (ζῷον) is a μικρὸς κόσμος (without attribution: *Phys.* 8.2.252b24), and Galen attributes it to unnamed ἄνδρες παλαιοὶ περὶ φύσιν ἱκανοί, which certainly might include Democritus (*De usu part.* 3.10 = fr. 10 Luria). If the tradition is genuinely Democritean, then the likeness between men and κόσμοι that this study discovers in early atomist thought is even more telling as an indication that early atomist necessity is best understood as supple determinism.

not have fr. 103 Luria, we could still infer that Democritus held beliefs like those represented in it. It confirms and further illustrates what we already know from a variety of sources about Democritus' interest in identifying general rules (e.g. like goes with like) by which vortex produces particular phenomena.

Under these circumstances, it seems wise to admit fr. 103 Luria as evidence and to allow the possibility that its discussion of regularity in human beings might go back to Democritus: at the very least, this discussion proceeds along the lines we would expect, given our other evidence for Democritus' interest in human beings and in the problem of the general and the particular.

(b) Another problematic datum, addressed already in passing (on pages 122 and 136 above),<sup>53</sup> is the critique of Democritus adopted by Epicurus (341-270), a critique which presumes that the early atomists denied randomness (thus providing an excuse to introduce the Epicurean atomic swerve). While there is no disputing that the early atomists were more focused on order than on randomness,<sup>54</sup> i.e. that they tended toward determinism rather than away from it (a trait which they share with the Ionian tradition at large, which generalizes from particulars to create regular maps of cosmic phenomena), this does not automatically mean that they denied variation, or that they thought all variation was reducible to linear causation explainable by rule. Remember how difficult it is for Democritus to discover a real cause (DK68B118, quoted on page 121 and discussed on page 132), and how he has τύχη retaining some indelible influence in

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<sup>53</sup> See note 25 above for sources.

<sup>54</sup> See e.g. the comparison of Democritean and Epicurean necessity in Silvestre (1985), 123-155.

determining human affairs (fr. 32 Luria, quoted above on page 124). From data like these (not to mention Democritus' interest in the distinction between general and particular: see pages 125-131 and 135 above), it seems that the difference(s) between Democritus and Epicurus may have been less obvious and oppositional than is often assumed.<sup>55</sup> Perhaps the latter merely formalized (in the swerve) a conception of randomness that the former accommodated by having an indefinite idea of necessity (a fuzzy idea that went out of fashion as succeeding generations of students demanded more rhetorical clarity and consistency from their teachers, and/or teachers sought to distance themselves from problematic understandings accruing to received ideas). On this reading of the evidence, Epicurus is best understood as updating an old idea that seemed (to him and others) to have outlived its usefulness, and the strictly deterministic Democritus against whom he polemicizes (see page 121) becomes a straw man.<sup>56</sup>

(c) Another factor to consider are the so-called indifference arguments which several testimonia attribute to the early atomists. Makin (1993) parses these arguments into three categories, two of which are pertinent to our discussion of necessity: (1) indifference and indivisibility, and (2) indifference and variety (49-65). (c<sub>1</sub>) Arguments in the first category combat the position of Parmenides (and his successors Zeno and

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<sup>55</sup> I am not the only scholar to raise this possibility: see note 26 above.

<sup>56</sup> Vindicating the judgment that Cicero puts in the mouth of Cotta: *Quid est in physicis Epicuri non a Democrito? nam etsi quaedam commutavit, ut quod paulo ante de inclinatione atomorum dixi, tamen pleraque dicit eadem, atomos, inane, imagines, infinitatem locorum innumerabilitatemque mundorum, eorum ortus interitus, omnia fere quibus naturae ratio continetur* (*De nat. deor.* 1.26.73 = fr. xcix Luria, fr. 233 Usener). Note that the *ratio* offered by Epicurus is that of Democritus, with a few changes that the speaker regards as relatively insignificant. Would this even be arguable if the swerve were a drastic departure from the original physics posited by the early atomists? See also Cic. *De fin.* 1.6.17-21: *Democritea dicit (Epicurus) perpauca mutans, sed ita, ut ea, quae corrigere vult, mihi quidem depravare videatur* (Democritus, fr. c Luria; Epicurus, fr. 234 Usener).



Melissus, both contemporaries of Democritus), that Being is unitary and fundamentally irreducible (see pages 58-64 above in chapter 1). This position came to the atomists fortified with an indifference argument: τί δ' ἄν μιν καὶ χρέος ὥρσεν ὕστερον ἢ πρόσθεν τοῦ μηδενὸς ἀρξάμενον φῦν; οὕτως ἢ πάμπαν πελέναι χρεῶν ἐστὶν ἢ οὐκί (Parmenides, fr. 8.9-11 Coxon, quoted in context on page 61 above in chapter 1).<sup>57</sup> In other words, since there is no compelling reason to divide Being from itself *here* but not *there*, there is no compelling reason to divide Being anywhere, and things that imply an alteration in Being (like birth and death) are purely illusions.<sup>58</sup> Positing void allowed the atomists to divide Being in theory, but to beat this indifference argument they still needed a way to divide it that was not arbitrary.<sup>59</sup> Here Democritus appears to have created his own indifference argument. Judging from Aristotle (*De gen. et corr.* 1.2.316a 13 = fr. 105 Luria), it seems to have run thus: (i) Being and non-Being are real; (ii) since non-Being is real, Being is separated from itself somewhere; (iii) if this separation could occur simply anywhere, then the entire physical mass of every κόσμος would disintegrate, and reality could not exist as we experience it (i.e. as a somewhat regular cycle rather than an utterly irregular chaos); (iv) reality as we experience it exists, therefore Being is not arbitrarily

<sup>57</sup> See Makin (1993), 28-33.

<sup>58</sup> Melissus provides a catalogue of these illusions (DK30B8 = Simpl. 558.19): the illusion of warmth and cold (confounded when one inexplicably becomes the other); the illusion that iron is hard (shattered when a man wears it down with his fingers); the illusion that animals are alive (shattered when they die, and when they are born from inanimate physical material); the illusion that rocks are solid (shattered when they come into being through the agency of water). His conclusion: εἰ γὰρ ἦν πολλά, τοιαῦτα χρή αὐτὰ εἶναι, οἷόν περ ἐγὼ φημι τὸ ἐν εἶναι ... ὥστε συμβαίνει μήτε ὄραν μήτε τὰ ὄντα γινώσκειν. οὐ τοίνυν ταῦτα ἀλλήλοις ὁμολογεῖ. φαμένοις γὰρ εἶναι πολλά καὶ αἰδία καὶ εἶδη τε καὶ ἰσχὺν ἔχοντα, πάντα ἑτεροιοῦσθαι ἡμῖν δοκεῖ καὶ μεταπίπτειν ἐκ τοῦ ἐκάστοτε ὀρωμένου. δῆλον τοίνυν, ὅτι οὐκ ὀρθῶς ἐωρώμεν οὐδὲ ἐκεῖνα πολλά ὀρθῶς δοκεῖ εἶναι.

<sup>59</sup> Like the division into four elements proposed by Empedocles. See Melissus' critique in note 58 above, which deconstructs the idea that individual elements are really different substances (since water creates rock, to give the most pointed example).

divisible: ἀνάγκη εἶναι σώματα ἀδιαίρετα (fr. 105 Luria). From our perspective, the salient virtue of Democritus' argument is its refusal to be too specific.<sup>60</sup> In order to marry the ancient Ionian idea that divisions in matter exist with the Eleatic contention that they cannot be arbitrary, the Democritean argument of necessity tends toward a concept of the individual atom that is indefinite, as Makin (1993) ultimately points out (59).

(c<sub>2</sub>) Early atomist arguments in the second category continue this trend toward a deliberately indefinite concept of particular phenomena (like the individual atom):

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
Λεύκιππος ... ὑπέθετο ... τῶν ἐν αὐτοῖς [sc. ἐν τοῖς στοιχείοις] σχημάτων ἄπειρον τὸ πλῆθος διὰ τὸ μηδὲν μᾶλλον τοιοῦτον ἢ τοιοῦτον εἶναι ... [Λεύκιππος καὶ Δημόκριτος] τῶν ἐν ταῖς ἀτόμοις σχημάτων ἄπειρον τὸ πλῆθος φασὶ διὰ τὸ μηδὲν μᾶλλον τοιοῦτον ἢ τοιοῦτον εἶναι. ταύτην γὰρ αὐτοὶ τῆς ἀπειρίας αἰτίαν ἀποδιδόασιν.	Leucippus ... held ... that the number of shapes in the elements was infinite because nothing is rather thus than thus ... [Leucippus and Democritus] say that the number of shapes in the atoms is infinite because nothing is rather thus than thus. They offer this as a reason for infinity. ( <i>Makin, augmented</i> )  Leucippus, fr. A8 DK Democritus, fr. A38 DK = fr. 2 Luria  Simpl. in <i>Phys.</i> 28.4 (= Theophr. <i>Phys. opin.</i> fr. 8; <i>Dox.</i> 483)

<sup>60</sup> For a more technical treatment of the argument in question in light of other passages from the early atomist corpus, see Makin (1993, 49-62), who confirms that the ultimate portrait of atoms emergent from this passage (and others) is one in which there is deliberate uncertainty about the attributes of matter in specific instances. Witness Makin's proposed understanding of Democritean atoms: "(vii) if a particular atom contains parts, it contains a finite though indefinite number of parts" (59).

<p>ἐνθεν γὰρ καὶ ὁ Δημόκριτος ἀπείρους εἶναι κόσμους ὑπετίθετο, ὑποτιθέμενος κενὸν εἶναι ἄπειρον· τίς γὰρ ἡ ἀποκλήρωσις τόδε μὲν τὸ τοῦ κενοῦ μέρος ὑπὸ κόσμου πληρωθῆναι, ἄλλα δὲ μή; ὥστε εἰ ἐν τινι μέρει τοῦ κενοῦ κόσμος ἐστί, καὶ ἐν παντὶ ἄρα τῷ κενῷ. ἀπείρου οὖν ὄντος τοῦ κενοῦ, ἄπειροι ἔσονται καὶ οἱ κόσμοι.</p>	<p>For hence it was that Democritus proposed an unlimited number of universes, proposing that there is an unlimited void. For by what dispensation is some particular part of the void to be filled by the universe, but others not? So that if a universe is in any part of the void, therefore [this is true] also in the whole void. Since, therefore, the void is unlimited, the universes will also be unlimited [in number]. (<i>Edwards</i>)</p> <p>Democritus, fr. 1 Luria</p> <p>Philopon. <i>in Phys.</i> 405.23</p>
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According to the argument in fr. 2 Luria, we have no reason to understand an individual atom to be one shape rather than another. According to fr. 1 Luria, we have no reason to think that cosmic matter is extant in one area of void and utterly absent in another, so infinite void must be full of infinite κόσμοι. Both arguments require something like supple determinism in order to make sense, presuming a degree of uncertainty about particulars (e.g. the individual atom, which might be any shape, or the individual κόσμος, which might be anywhere) that is nonetheless compatible with an ability to make intelligent generalizations.<sup>61</sup> The fact that Leucippus and Democritus felt comfortable

<sup>61</sup> Makin (1993) explains: “Indifference arguments for an infinite variety of shapes and sizes in the atoms [left out of our discussion to avoid irrelevant disputes] apply also to worlds, and give the conclusion that worlds will come in as many various shapes and sizes as are consistent with other principles of the atomic theory. There will be reasons why there are no worlds shaped like snakes, concerning the behavior of atoms in the whirl in which worlds are formed. But if atoms, due to the action of the whirl, form tambourine-shaped worlds, then there is no reason why the variety of these worlds should be limited to those of one radius rather than another. Given such an infinite array of worlds, there seems no reason why there should be just one like this rather than more than one. Democritus draws that conclusion: there will be other worlds just like this one (Cic. *Acad. priora* 2.17.55, 2.40.125; [Hippocr.] *Epist.* 10 = fr. 6 Luria)” (64). Compare the discussion on page 130 above. Makin vindicates our reading of the generic atomist κόσμος as a universal type of which many particular instances exist (including some very like ours and others very different).

advancing such arguments vindicates us in offering supple determinism as a reasonable appraisal of early atomist necessity.

### **Early Atomist Zoogony and Anthropogony (2.3)**

At this point, a summary of early atomist cosmology is in order. Atoms and void are the only things that exist permanently. Atoms move constantly relative to one another, forming impermanent alliances constrained by the shape of individual atoms in particular situations (atoms which adhere or fail to adhere to one another as they are more or less like one another, following the principle of homogeneity).<sup>62</sup> When a certain number of these alliances occur in a particular location (as is necessary), the resulting vortex gives birth to a κόσμος like the one in which the Greeks happened to live. The vortex grows the κόσμος up to a certain point, adding new atoms from the outside and sorting the inner atoms (by the principle of homogeneity). When a κόσμος cannot assimilate any more extracosmic atoms, it achieves the ἀκμή of its integration and starts to disintegrate, eventually dissolving entirely (and releasing all of its atoms and void to be taken up by alien vortices building other emerging κόσμοι).<sup>63</sup> The whole of this endlessly iterative process may be called necessity (ἀνάγκη).

It would be strange for the early atomists to develop this carefully detailed account of cosmic evolution without including a story about the origin and development of biological life (such as their predecessors in the Critical Tradition offered, as we have already seen in chapter 1). It comes as no great surprise, therefore, that the doxography

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<sup>62</sup> See fr. 316 Luria, quoted and discussed on page 127 and following and note 37 above.

<sup>63</sup> See DK68A40, quoted and discussed on pages 114-115 above. Compare frs. 288-313 Luria; Mugler (1959), 9-19; Taylor (1999), 188-195.

remembers such a story (at least for Democritus):

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
Δημόκριτος [λέγει] γεγεννημένα εἶναι τὰ ζῶια συστάσει εἶδε<ι> ἐν<δεε>-στ<έ>ρ<ω>ν (?) πρῶτον τοῦ ὕγρου ζωιογονοῦντος.	Democritus said that animals <sup>64</sup> first come into being through condensation of generative moisture.  Democritus, fr. A139 DK = fr. 154a Taylor = fr. 514 Luria  Aet. 5.19.6 = [Galen.] <i>Hist. philos.</i> 123
<i>Democrito vero Abderitae ex aqua limoque primum visum esse homines procreatos.</i>	Democritus of Abdera thought that human beings were first brought into being from water and mud. ( <i>Taylor</i> )  Democritus, fr. A139 DK = fr. 154b Taylor = fr. 514 Luria  Censor. 4.9
<i>erravit ergo Democritus, qui [homines] vermiculorum modo putavit effusos esse de terra nullo auctore nullaue ratione.</i>	Democritus was wrong to think that human beings were generated from the earth like worms, without any design or any creator. ( <i>Taylor</i> )  Democritus, fr. A139 DK = fr. 154c Taylor = fr. 514 Luria  Lact. <i>Inst. div.</i> 7.7.9

According to the hints here, the early atomist account of life's origins agreed broadly with other stories in the Critical Tradition, e.g. Xenophanean and Anaxagorean accounts that derive biological life from earth and water.<sup>65</sup> As the vortex that incorporates the Greek

64 The doxography records that Democritus' disciples identified plants as animals fixed in the earth: ζῶιον γὰρ ἔγγειον τὸ φυτὸν εἶναι, οἱ περὶ Πλάτωνα καὶ Ἀναξαγόραν καὶ Δημόκριτον οἶονται (Plut. *Quaest. nat.* 1.1.1.911d = fr. 556 Luria).

65 For Xenophanes, see DK21B29 and B33, quoted and discussed on page 39 above in chapter 1. For

κόσμος turns, placing like things with like, one result is the creation and proliferation of various life-forms. If we want to know more about how the atomists imagined this happening, there are other testimonia we can refer to:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
<p>φερομένας δὲ [τὰς ἀτόμους] ἐμπίπτειν καὶ περιπλέκεσθαι περιπλοκὴν τοιαύτην, ἣ συμψαύειν μὲν αὐτὰ καὶ πλησίον ἀλλήλων εἶναι ποιεῖ, φύσιν μέντοι μίαν ἐξ ἐκείνων κατ' ἀλήθειαν οὐδ' ἡντιναοῦν γεννᾶν· κομιδῇ γὰρ εὖηθες εἶναι τὸ δύο ἢ τὰ πλείονα γενέσθαι ἅν ποτε ἓν. τοῦ δὲ συμμένειν τὰς οὐσίας μετ' ἀλλήλων μέχρι τινὸς αἰτιᾶται τὰς ἐπαλλαγὰς καὶ τὰς ἀντιλήψεις τῶν σωμάτων· τὰ μὲν γὰρ αὐτῶν εἶναι σκαληνά, τὰ δὲ ἀγκιστρῶδη, τὰ δὲ κοῖλα, τὰ δὲ κυρτά, τὰ δὲ ἄλλας ἀναρίθμους ἔχοντα διαφοράς· ἐπὶ τοσοῦτον οὖν χρόνον σφῶν αὐτῶν ἀντέχεσθαι νομίζει καὶ συμμένειν, ἕως ἰσχυροτέρα τις ἐκ τοῦ περιέχοντος ἀνάγκη παραγενομένη διασεΐσῃ καὶ χωρὶς αὐτὰς διασπεΐρῃ.</p>	<p>As they [<i>sc.</i> the atoms] move they collide and become entangled in such a way as to cling in close contact to one another, but not so as to form one substance of them in reality of any kind whatever; for it is very simple-minded to suppose that two or more could ever become one. The reason he gives for atoms staying together for a while is the intertwining and mutual hold of the primary bodies; for some of them are angular, some hooked, some concave, some convex, and indeed with countless other differences; so he thinks they cling to each other and stay together until such time as some stronger necessity comes from the surrounding and shakes and scatters them apart. (<i>KRS</i>)</p> <p>Democritus, fr. A37 DK  = fr. 583 KRS  = fr. 44a Taylor  = fr. 293 Luria</p> <p>Aristot. Περὶ Δημοκρίτου ap. Simplicius in <i>De caelo</i> 295.11</p>

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Anaxagoras, see DK59A1, quoted on page 88 above in chapter 1.

<p>ταύτας δὲ τὰς ἀτόμους ἐν ἀπείρῳ τῷ κενῷ κεχωρισμένας ἀλλήλων καὶ διαφερούσας σχήμασί τε καὶ μεγέθεσι καὶ θέσει καὶ τάξει φέρεσθαι ἐν τῷ κενῷ καὶ ἐπικαταλαμβάνουσας ἀλλήλας συγκρούεσθαι καὶ τὰς μὲν ἀποπάλλεσθαι, ὅπῃ ἂν τύχωσιν, τὰς δὲ περιπλέκεσθαι ἀλλήλαις κατὰ τὴν τῶν σχημάτων καὶ μεγεθῶν καὶ θέσεων καὶ τάξεων συμμετρίαν καὶ συμμένειν καὶ οὕτως τὴν τῶν συνθέτων γένεσιν ἀποτελεῖσθαι.</p>	<p>These atoms move in the infinite void, separate one from the other and differing in shapes, sizes, position and arrangement; overtaking each other they collide, and some are shaken away in any chance direction, while others, becoming intertwined one with another according to the congruity of their shapes, sizes, positions, and arrangements, stay together and so effect the coming into being of compound bodies. (KRS)</p> <p>Democritus, fr. A14 DK  = fr. 584 KRS  = fr. 57 Taylor  = fr. 295 Luria</p> <p>Simpl. in <i>De caelo</i> 242.21</p>
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In the infinite void, infinite atoms of infinite shape (τὰ δὲ ἄλλας ἀναρίθμους ἔχοντα διαφοράς [DK68A37])<sup>66</sup> move endlessly relative to each another. *In vortice*, a certain number of these are sorted (like with like, κατὰ τὴν τῶν σχημάτων καὶ μεγεθῶν καὶ θέσεων καὶ τάξεων συμμετρίαν [DK68A14]): during this process, susceptible atoms (τὰ μὲν γὰρ αὐτῶν εἶναι σκαληνά, τὰ δὲ ἀγκιστρῶδη, τὰ δὲ κοῖλα, τὰ δὲ κυρτά [DK68A37]) interlock to form compounds ([τὰς ἀτόμους] ἐμπίπτειν καὶ περιπλέκεσθαι περιπλοκὴν τοιαύτην, ἣ συμψαύειν μὲν αὐτὰ καὶ πλησίον ἀλλήλων εἶναι [DK68A37]; φέρεσθαι ἐν τῷ κενῷ καὶ ἐπικαταλαμβάνουσας ἀλλήλας συγκρούεσθαι καὶ τὰς μὲν ἀποπάλλεσθαι, ὅπῃ ἂν τύχωσιν, τὰς δὲ περιπλέκεσθαι ἀλλήλαις [DK68A14]) that endure until some greater outside pressure intervenes to force them apart (ἕως ἰσχυροτέρα τις ἐκ τοῦ περιέχοντος ἀνάγκη παραγενομένη διασείσῃ καὶ χωρὶς αὐτὰς διασπείρῃ [DK68A37]).

<sup>66</sup> See also DK67A8, quoted above on page 143.

Among the number of these temporary compounds are the material bodies of plants, animals, and human beings (as well as every other sensible phenomenon in the Greek κόσμος). But what animates some of these bodies, causing them to live while others remain corpses?

The early atomists had an answer for this question:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
(ἡ ψυχὴ) ἔδοξέ τισι πῦρ εἶναι· καὶ γὰρ τοῦτο λεπτομερέστατόν τε καὶ μάλιστα τῶν στοιχείων ἀσώματον, ἔτι δὲ κινεῖται τε καὶ κινεῖ τὰ ἄλλα πρώτως. Δημόκριτος δὲ καὶ γλαφυρωτέρως εἴρηκεν ἀποφηνάμενος, διὰ τί τούτων ἐκάτερον. ψυχὴν μὲν γὰρ εἶναι ταῦτόν τε καὶ νοῦν. τοῦτο δ' εἶναι τῶν πρώτων καὶ ἀδιαιρέτων σωμάτων, κινητικὸν δὲ διὰ μικρομέρειαν καὶ τὸ σχῆμα· τῶν δὲ σχημάτων εὐκίνητότατον τὸ σφαιροειδὲς λέγει· τοιοῦτον δ' εἶναι τὸν τε νοῦν καὶ τὸ πῦρ.	That has led some to regard it [the soul] as fire, for fire is the subtlest of the elements and nearest to the incorporeality; further, in the primary sense, fire both is moved and originates movement in all the others. Democritus has expressed himself more ingeniously than the rest on the grounds for ascribing each of these two characters to soul; soul and thought are, he says, one and the same thing, and this thing must be one of the primary and indivisible bodies, and its power of originating movement must be due to its fineness of grain and the shape of its atoms; he says that of all the shapes the spherical is the most mobile, and that this is the shape of the particles of both fire and thought. ( <i>Smith in Barnes [1984]</i> )  Democritus, fr. A101 DK = fr. 107b Taylor = fr. 444 Luria  Aristot. <i>De anima</i> 1.2.405a5-a13



<p>ἐνιοὶ δὲ καὶ κινεῖν φασὶ τὴν ψυχὴν τὸ σῶμα ἐν ᾧ ἐστίν, ὡς αὐτὴ κινεῖται, οἷον Δημόκριτος παραπλησίως λέγων Φιλίππῳ τῷ κωμωδιοδιδασκάλῳ. φησὶ γὰρ τὸν Δαίδαλον κινουμένην ποιῆσαι τὴν ξυλίνην Ἀφροδίτην ἐγχέαντ' ἄργυρον χυτόν· ὁμοίως δὲ καὶ Δημόκριτος λέγει κινουμένας γὰρ φησὶ τὰς ἀδιαίρετους σφαίρας, διὰ τὸ πεφυκέναι μηδέποτε μένειν, συνεφέλκειν καὶ κινεῖν τὸ σῶμα πᾶν.</p>	<p>Some say that the soul moves the body in which it is in the same way as it is itself moved, e.g., Democritus, who says much the same as the comic dramatist Philippus. He describes Daedalus as making the wooden statue of Aphrodite move by pouring in quicksilver. Democritus' view is similar; he says that the indivisible spheres are in motion because their nature is such that they are never still, and they move the whole body by dragging it along with them. (<i>Taylor</i>)</p> <p>Democritus, fr. A104 DK = fr. 108 Taylor = fr. 445 Luria</p> <p>Aristot. <i>De anima</i> 1.2.406b15</p>
<p><i>Democritum enim, magnum illum quidem virum, sed levibus et rotundis corpusculis efficientem animum concursu quodam fortuito, omittamus. Nihil est enim apud istos, quod non atomorum turba conficiat.</i></p>	<p>Non ci soffermiamo ora su Democrito, che è sicuramente un uomo illustre, ma che fa derivare l'anima da un effluvio casuale di corpusculi lisci e rotondi. Secondo loro, non esiste realtà che non possa essere generata da un ammasso caotico di atomi. (<i>Luria, Krivushina</i>)</p> <p>Democritus, fr. 449 Luria</p> <p>Cic. <i>Tusc. disp.</i> 11.22</p>

The live body—whether animal, vegetable, or mineral<sup>67</sup>—contains inside it a number of smooth, spherical atoms (τῶν δὲ σχημάτων ... τὸ σφαιροειδὲς λέγει [fr. 444 Luria];

67 Several testimonia witness that the early atomists understood plants, animals, humans, and even minerals as animate and (to varying degrees) intelligent. See fr. 448 Luria, especially Aetius 4.4.7: ὁ δὲ Δημόκριτος πάντα μετέχειν φησὶ ψυχῆς ποιᾶς. This idea is not unprecedented in the Critical Tradition: recall (1) Heraclitus' idea that everything in the Greek universe is an expression of intelligent fire (see pages 45 and 50 above in chapter 1), as well as (2) Empedocles' teaching that the same δαίμονες occupy all kinds of animate bodies (see page 73 above in chapter 1), and (3) Anaxagoras' idea that all things contain elements of everything disposed by a universal cosmic intelligence (see pages 84-86 above in chapter 1).

*levibus et rotundis corpusculis* [fr. 449 Luria]). Moving constantly in contact with one another and the grosser material body surrounding them, these atoms constitute the mind and breath of a living organism (ψυχὴν μὲν γὰρ εἶναι ταὐτὸ καὶ νοῦν: fr. 444 Luria), and cause its movement (τὰς ἀδιαιρέτους σφαίρας, διὰ τὸ πεφυκέναι μηδέποτε μένειν, συνεφέλκειν καὶ κινεῖν τὸ σῶμα πᾶν: fr. 445 Luria). Of course these soul atoms—routinely identified as the principal components of fire as well (ἔδοξε τισι πῦρ εἶναι ... τοιοῦτον δ' εἶναι τὸν τε νοῦν καὶ τὸ πῦρ: fr. 444 Luria)<sup>68</sup>—are not permanently trapped; some of them escape the body regularly. Witness the following discussions of human sleep and respiration:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
Λεύκιππος [λέγει] ὕπνον σώματος γίνεσθαι ἐκκρίσει τοῦ λεπτομεροῦς πλείονι τῆς εἰσκρίσεως τοῦ ψυχικοῦ θερμοῦ <ῆς> τὸν πλεονασμὸν αἴτιον θανάτου	Leucippo ritiene che il sonno riguardi il corpo e si origini quando la fuoriuscita delle particelle più sottili è superiore all'ingresso del calore psichico, fuoriuscita che, allorché sia eccessiva, è causa di morte. ( <i>Luria, Krivushina</i> )  Leucippus, fr. A34 DK Democritus, fr. 466 Luria  Aet. 5.25.3

<sup>68</sup> Leucippus also identified the animating principle of the living body with fire: Λεύκιππος [λέγει] ἐκ πυρὸς εἶναι τὴν ψυχὴν (Aet. 4.3.7 = DK67A28; Democritus, fr. 447 Luria). The early atomist soul of fire atoms recalls the fiery soul imagined by Heraclitus: see page 49 above in chapter 1.

<p>Δημόκριτος δ' ὅτι μὲν ἐκ τῆς ἀναπνοῆς συμβαίνει τι τοῖς ἀναπνέουσι λέγει, φάσκων κωλύειν ἐκθλίβεσθαι τὴν ψυχὴν· οὐ μέντοι ὥς τούτου γ' ἔνεκα ποιήσασαν τοῦτο τὴν φύσιν οὐθὲν εἴρηκεν· ὅλως γὰρ ὥσπερ καὶ οἱ ἄλλοι φυσικοί, καὶ οὗτος οὐθὲν ἄπτεται τῆς τοιαύτης αἰτίας. λέγει δ' ὥς ἡ ψυχὴ καὶ τὸ θερμὸν ταῦτόν, τὰ πρῶτα σχήματα τῶν σφαιροειδῶν. ἐκκρινομένων οὖν αὐτῶν ὑπὸ τοῦ περιέχοντος ἐκθλίβοντος, βοήθειαν γίνεσθαι τὴν ἀναπνοήν φησιν. ἐν γὰρ τῷ ἀέρι πολὺν ἀριθμὸν εἶναι τῶν τοιούτων ἃ καλεῖ ἐκείνος νοῦν καὶ ψυχὴν. ἀναπνέοντος οὖν καὶ εἰσιόντος τοῦ ἀέρος συνεισιόντα ταῦτα καὶ ἀνείργοντα τὴν θλίψιν κωλύειν τὴν ἐνοῦσαν ἐν τοῖς ζώοις διέναι ψυχὴν. καὶ διὰ τοῦτο ἐν τῷ ἀναπνεῖν καὶ ἐκπνεῖν εἶναι τὸ ζῆν καὶ τὸ ἀποθνήσκειν. ὅταν γὰρ κρατῇ τὸ περιέχον συνθλίβον καὶ μηκέτι θύραθεν εἰσιὼν δύνηται ἀνείργειν, μὴ δυναμένου ἀναπνεῖν, τότε συμβαίνει τὸν θάνατον τοῖς ζώοις· εἶναι γὰρ τὸν θάνατον τὴν τῶν τοιούτων σχημάτων ἐκ τοῦ σώματος ἔξοδον ἐκ τῆς τοῦ περιέχοντος ἐκθλίψεως.</p>	<p>Democritus, however, does teach that in the breathing animals there is a certain result produced by respiration; he asserts that it prevents the soul from being extruded by the body. Nevertheless, he by no means asserts that it is for this purpose that nature so contrives it, for he, like the other natural scientists, altogether fails to attain to any such explanation. His statement is that the soul and the hot element are identical, being the primary forms among the spherical particles. Hence, when these are being separated out by the surrounding atmosphere thrusting them out, respiration, according to his account, comes in to succour them. For in the air there are many of those particles which he calls mind and soul. Hence, when we breathe and the air enters, these enter along with it, and by their action cancel the pressure, thus preventing the expulsion of the soul which resides in the animal. This explains why life and death are bound up with the taking in and letting out of the breath; for death occurs when the compression by the surrounding air gains the upper hand, and, the animal being unable to respire, the air from outside can no longer enter and counteract the compression. Death is the departure of those forms owing to the expulsive pressure exerted by the surrounding air. (<i>Ross in Barnes [1984]</i>)</p> <p>Democritus, fr. A106 DK  = fr. 106c Taylor  = fr. 445, 463 Luria</p> <p>Aristot. <i>De resp.</i> 4.471b30</p>
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These fragments suppose a continuous exchange of soul atoms between the individual organism and the environment, which contains a great number of such atoms wandering

free in the air (ἐν γὰρ τῷ ἀέρι πολὺν ἀριθμὸν εἶναι τῶν τοιούτων ἃ καλεῖ ἐκεῖνος νοῦν καὶ ψυχὴν: DK68A106). Respiration controls the exchange rate, restraining the body's tendency to yield to external pressure and squeeze out all of the soul atoms inside it (ἐκ τῆς ἀναπνοῆς συμβαίνει τι τοῖς ἀναπνέουσι λέγει, φάσκων κωλύειν ἐκθλίβεσθαι τὴν ψυχὴν: DK68A106). Sleep occurs when the body exhales more soul atoms than it inhales (ὑπνον σώματος γίνεσθαι ἐκκρίσει τοῦ λεπτομεροῦς πλείονι τῆς εἰσκρίσεως τοῦ ψυχικοῦ θερμοῦ: fr. 466 Luria), causing it to lose consciousness. When it loses a critical number of soul atoms, the result is death (<ῆς> τὸν πλεονασμὸν αἴτιον θανάτου [fr. 466 Luria]; ὅταν γὰρ κρατῇ τὸ περιέχον συνθλίβον καὶ μηκέτι θύραθεν εἰσιὸν δύνηται ἀνείργειν, μὴ δυναμένου ἀναπνεῖν, τότε συμβαίνει τὸν θάνατον τοῖς ζώοις [DK68A106]), a permanent loss of consciousness.<sup>69</sup> Biological life thus becomes an accidental byproduct of interaction between smooth and rough atoms, not the calculated result of a telic plan<sup>70</sup> (οὐ μέντοι ὡς τούτου γ' ἔνεκα ποιήσασαν τοῦτο τὴν φύσιν οὐθὲν εἴρηκεν· ὅλως γὰρ ὥσπερ καὶ οἱ ἄλλοι φυσικοί, καὶ οὗτος οὐθὲν ἄπτεται τῆς τοιαύτης αἰτίας: DK68A106). Smooth, spherical atoms enter and enliven grosser compounds because they are relatively more mobile (τῶν δὲ σχημάτων εὐκινητότατον τὸ σφαιροειδὲς λέγει: fr. 444 Luria), not because of any preordained cosmic purpose or plan deliberately calibrated to foster life. Likewise, the different shapes that life-forms take

69 Note that death does not require the complete absence of soul atoms in the body: an abiding residue of these atoms explains some of the odd properties of corpses, e.g. their ability to continue growing nails and hair. See fr. 448, 586 Luria.

70 Such as Socrates wants Anaxagoras' cosmic Mind to provide in *Phaedo* 98b-c. Socrates' chief problem is the identity between breath (ψυχὴ) and thought (νοῦς) assumed by Anaxagoras (and by Democritus, e.g. in DK68A106 quoted on page 152 above).

over time are not planned. Each emerges spontaneously from natural necessity: like atoms inevitably go with like, and certain atoms inevitably adhere together better than others, creating different containers where soul atoms from the external environment can be lodged. Some of these containers then go on to become reproductively viable,<sup>71</sup> creating species of life that persist through time.<sup>72</sup>

As the vivifying element in every living organism, the early atomist soul unites in itself the faculties of thought and sensory perception (e.g. sight, hearing, and touch in

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71 The atomists had a developed theory of sexual reproduction. According to Democritus, every adult contributes a reproductive seed to its embryo that contains tiny, imperceptible versions of the adult's larger organs (fr. 525, 526, 527 Luria: note that the seeds contain atoms from every part of the contributing adult). The final physical characteristics of the embryo are determined by a struggle between the paternal and maternal seeds, which occurs when these meet in the womb (fr. 530 Luria). Whichever seed contributes more atoms to a particular organ in the embryo ultimately controls how that organ develops (fr. 531, 532, 533 Luria). The embryo's atoms are arranged in the womb on the principle of homogeneity, with the mother's body providing a kind of blueprint for that of the offspring (ἐν ταῖς ὑστέραις μένει τὸ ζῶιον ... ὡς Δημόκριτός φησιν, ἵνα διαπλάττηται τὰ μόρια κατὰ τὰ μόρια τῆς ἐχούσης; fr. 535 Luria = Aristot. *De gen. animal.* 2.4.740a33). The link between the first life-forms, which originate in water and mud (see pages 146-148 above), and the later ones, which reproduce sexually, is not made explicit in any of the early atomist testimonia available to us. Likewise, early atomist distinctions between plants and animals are unclear, with extant *testimonia* seeming to refer to animals (especially human beings).

72 Note that Aristotle refers to multiple sources (e.g. οἱ ταῦτα λέγοντες in *Phys.* 2.8.198b23 = fr. 516 Luria) as advocating an atelic evolution of biological life-forms like that proposed by Empedocles (see pages 70-72 above in chapter 1). Created by accident, the original atelic life-forms persist and evolve only insofar as their accidental structure happens to allow: some of them are made such that they cannot survive long (e.g. Empedocles' βουγενῆ ἀνδρόπρωρα, which Aristotle offers here as an explicit example); others become the enduring plant and animal species familiar to us (including our own). It is likely that the early atomists subscribed to a similar theory of biological evolution. One indication that Democritus at least viewed biological life from this perspective is fr. 561 Luria, in which the atomist discusses the mule: ἡμίονους δὲ λέγει μὴ τίττειν ... μὴ γὰρ εἶναι φύσεως ποίημα τὴν ἡμίονον, ἀλλὰ ἐπινοίας ἀνθρωπίνης καὶ τόλμης ὡς ἂν εἴποις μοιχιδίου ἐπιτέχνημα τοῦτο καὶ κλέμμα. δοκεῖ δέ μοι, ἢ δὲ ὅς, ὄνου ἵππον βιασαμένου κατὰ τύχην κυῆσαι, μαθητὰς δὲ ἀνθρώπους τῆς βίας ταύτης γεγεννημένους εἶτα μέντοι προελθεῖν ἐπὶ τὴν τῆς γονῆς αὐτῶν συνήθειαν (*Ael. N. a.* 12.16). The Democritean mule is not a creature of nature, but of accidental rape; if man did not intervene, it would not exist as a species. The model of speciation here is one in which life-forms exist and reproduce as they are accidentally able; the viable survive (as legitimate offspring of nature), and the rest die out (as unfortunate aberrations whose life necessity cannot extend beyond a comparatively short-lived individual). This is the same model assumed in the story of biological evolution attributed to Empedocles (and unnamed others).

human beings), which exist as changes in its material composition or mixture (κρῆσις).<sup>73</sup>

This is best illustrated by a summary overlook of key atomist testimonia describing how

(a) thought and (b) perception occur:

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
(a <sub>1</sub> ) περὶ δὲ τοῦ φρονεῖν ἐπὶ τοσοῦτον εἶρηκεν ὅτι γίνεται συμμέτρως ἐχούσης τῆς ψυχῆς κατὰ τὴν κρῆσιν· ἐὰν δὲ περίθερμός τις ἢ περίψυχρος γένηται, μεταλλάττειν φησί. δι' ὃ τι καὶ τοὺς παλαιοὺς καλῶς τοῦθ' ὑπολαβεῖν ὅτι ἐστὶν ἄλλοφρονεῖν. ὥστε φανερόν, ὅτι τῇ κράσει τοῦ σώματος ποιεῖ τὸ φρονεῖν, ὅπερ ἴσως αὐτῷ καὶ κατὰ λόγον ἐστί, σῶμα ποιοῦντι τὴν ψυχὴν. ( <i>Luria</i> )	Concerning thought, Democritus says merely that “it arises when the soul's composition is duly proportioned.” But if one becomes excessively hot or cold, he says, thinking is transformed; and it was for some such reason, the ancients well believed, that the mind became “deranged.” Thus it is clear that he explains thought by the composition of the body — a view perhaps not unreasonable in one who regards the soul itself as corporeal. ( <i>Stratton</i> )  Democritus, fr. A135 DK = fr. 113 Taylor = fr. 460 Luria  Theophr. <i>De Sensu</i> 58
(a <sub>2</sub> ) <i>Quem (deligam)? Democritum? Tunc putes ... si nunc, aut si etiam dormientes aliquid animo videre videamur; imagines extrinsecus in animos nostros per corpus irrompere?</i> ( <i>Luria</i> )	Who would be best? Democritus perhaps? Do you really think ... that if we now (or when we're asleep) seem to 'see' something in our mind, images are bursting into our minds through our bodies from the outside? ( <i>Brittain, adapted</i> )  Democritus, fr. 470 Luria  Cic. <i>Acad. priora</i> 2.40.125 <sup>74</sup>

73 In addition to fr. 460 Luria (quoted on this page), see also fr. 436 Luria (Λεύκιππος, Δημόκριτος τὰς αἰσθήσεις καὶ τὰς νοήσεις ἑτεροιώσεις εἶναι τοῦ σώματος; Aet. 4.8.5; Stob. 1.50.4, 12).

74 Cicero makes several other references to atomist psychology, even incorporating some Greek terminology: *Fit enim nescio qui, ut quasi coram adesse videre, cum scribo aliquid ad te, neque id kat' εἰδῶλων φαντασίας, ut dicunt tui amici novi qui putant etiam διανοητικὰς φαντασίας spectris Catianis excitari—nam, ne te fugiat, Catius Insuber Epicurius, qui nuper est mortuus, quae ille Gargettius et iam ante Democritus εἶδωλα, hic «spectra» nominat—his autem spectris etiamsi oculi*

<p>(b<sub>1</sub>) ὁρᾶν μὲν οὖν ποιεῖ τῇ ἐμφάσει· ταύτην δὲ ἰδίως λέγει· τὴν γὰρ ἔμφασιν οὐκ εὐθὺς ἐν τῇ κόρῃ γίνεσθαι, ἀλλὰ τὸν ἀέρα τὸν μεταξὺ τῆς ὀψεως καὶ τοῦ ὁρωμένου τυποῦσθαι συστελλόμενον ὑπὸ τοῦ ὁρωμένου καὶ τοῦ ὁρῶντος ἅπαντος γὰρ αἰεὶ γίνεσθαι τινα ἀπορροήν· (<i>Luria</i>)</p>	<p>He makes sight occur by means of the image; his account of this is original, for he says that the image is not immediately produced in the eyeball, but the air between the sight and the thing seen is compacted by the seer and the thing seen and an impression<sup>75</sup> is made on it, as everything is always giving off an effluence.<sup>76</sup> (<i>Taylor</i>)</p> <p>Democritus, fr. A135 DK  = fr. 113 Taylor  = fr. 478 Luria</p> <p>Theophr. <i>De sensu</i> 50</p>
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*possint feriri, quod velis <nolis> ipsa incurrunt, animus qui possit, ego non video: doceas tu me oportebit, cum salvus veneris, in meane potestate [ut] sit spectrum tuum, ut similes mihi conlibitum sit de te cogitare, illud occurrat, neque solum de te, qui mihi haeres in medullis, sed si insulam Britanniam coepero cogitare, eius εἰδῶλον mihi advolabit ad pectus* (Cic. *Epist. ad fam.* 15.16.1 = fr. 470 Luria); *Fac [deos] imagines esse quibus pulsantur animi: species dumtaxat obicitur quaedam; num etiam cur ea beata sit, cur aeterna? quae autem istae imagines vestrae aut unde? a Democrito omnino haec licentia; sed et ille reprehensus a multis est* (Cic. *De nat. deor.* 1.38.107 = fr. 470 Luria); *Imagines, quae idola nominant (sc. Epicurei), quorum incursione non solum videamus, sed etiam cogitemus (Democriti sunt)* (Cic. *De fin.* 1.6.21 = fr. 470 Luria).

75 According to the simile credited to Democritus further on in this passage, this impression is like a mark left in wax: τοιαύτην εἶναι τὴν ἐντύπωσιν οἷον εἰ ἐκμάξειας εἰς κηρόν (*De sensu* 51).

76 Theophrastus goes on to enumerate other physical factors that Democritus finds optimal for sight. The eye itself should be moist (since moisture receives impressions from the external environment) and free from oily discharge, while the channels connecting it with the inner body should be dry, straight, and unobstructed, such that “they match the shape of impressions” (trans. Taylor): ἔπειτα τοῦτον στερεὸν ὄντα καὶ ἀλλόχρων ἐμφαίνεσθαι τοῖς ὀμμασιν ὑγροῖς· καὶ τὸ μὲν πυκνὸν οὐ δέχεσθαι τὸ δ’ ὑγρὸν διέναι. διὸ καὶ τοὺς ὑγροὺς τῶν σκληρῶν ὀφθαλμῶν ἀμείνους εἶναι πρὸς τὸ ὁρᾶν, εἰ δὲ μὲν ἔξω χιτῶν ὡς λεπτότατος καὶ πυκνότατος εἴη, τὰ δ’ ἔντος <τῆς> πυκνῆς καὶ ἰσχυρᾶς σαρκὸς ὡς μάλιστα σομφὰ καὶ κενά, ἔστι δὲ ἰκμάδος παχείας τε καὶ λιπαρᾶς, καὶ αἱ φλέβες <αἱ> κατὰ τοὺς ὀφθαλμοὺς εὐθεῖαι καὶ ἄνικμοι καὶ ὁμοσχημονεῖν <οἷά τε> τοῖς ἀποτυπουμενοῖς· τὰ γὰρ ὁμόφυλα μάλιστα ἕκαστον γνωρίζειν (*De sensu* 50). Notice the concluding reference to the principle of homogeneity: “For everything most readily recognizes things of the same kind as itself” (trans. Taylor).

<p>(b<sub>2</sub>) τὴν δ' ἀκοὴν παραπλησίως ποιεῖ τοῖς ἄλλοις. εἰς γὰρ τὸ κενὸν ἐμπίπτοντα τὸν ἀέρα κίνησιν ἐμποιεῖν, πλὴν ὅτι κατὰ πᾶν μὲν ὁμοίως τὸ σῶμα εἰσιέναι, μάλιστα δὲ καὶ πλεῖστον διὰ τῶν ὠτων, ὅτι διὰ πλείστου τε κενοῦ διέρχεται καὶ ἥκιστα διαμῖναι. διὸ καὶ κατὰ μὲν τὸ ἄλλο σῶμα οὐκ αἰσθάνεσθαι, ταύτῃ δὲ μόνον. ὅταν δὲ ἐντὸς γένηται, σκίδνασθαι διὰ τὸ τάχος· τὴν γὰρ φωνὴν εἶναι πυκνουμένου τοῦ ἀέρος καὶ μετὰ βίας εἰσιόντος, ὥσπερ οὖν ἐκτὸς ποιεῖ τῇ ἀφῇ τὴν αἴσθησιν, οὕτω καὶ ἐντὸς. (Luria)</p>	<p>His account of hearing is similar to that of the others; air entering a void creates motion, except that it comes in all over the body, but especially and most of all through the ears, because there it travels through the most void and has the least delay. That is why one does not perceive [sound] with the whole body, but only there. And when it gets inside, its speed causes it to disperse; sound occurs when the air is condensed and penetrates with force.<sup>77</sup> Just as he makes external perception come about by contact, so with internal.<sup>78</sup> (Taylor, <i>augmented</i>)</p> <p>Democritus, fr. A135 DK  = fr. 113 Taylor  = fr. 488 Luria</p> <p><i>Theophr. De sensu 55</i></p>
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77 Aetius makes the likeness between vision and hearing more explicit, invoking the principle of homogeneity, which he illustrates with a Homeric allusion and a summary of the same analogies provided by Sextus in fr. 316 Luria (see page 127 above): Δημόκριτος καὶ τὸν ἀέρα φησὶν εἰς ὁμοιοσχήμονα θρύπτεσθαι σώματα καὶ συγκαλινδεῖσθαι τοῖς ἐκ τῆς φωνῆς θραύσμασι. «κολοῖδς» γὰρ «παρὰ κολοῖδον ἰζάνει» καὶ «ὡς αἰεὶ τὸν ὁμοῖον ἄγει θεὸς ὡς τὸν ὁμοῖον». (Od. 18.218). καὶ γὰρ ἐν τοῖς αἰγιαλοῖς αἱ ὁμοῖαι ψῆφοι κατὰ τοὺς αὐτοὺς τόπους ὀρώνται κατ' ἄλλο μὲν αἱ σφαιροειδεῖς, κατ' ἄλλο δὲ αἱ ἐπιμήκεις καὶ ἐπὶ τῶν κοσκινευόντων δὲ ἐπὶ τὸ αὐτὸ συναλίζεται τὰ ὁμοιοσχήμονα, ὥστε χωρὶς εἶναι τοὺς κυάμους καὶ ἐρεβίνθους (Aet. 4.19.13). Air takes aural impressions from the surrounding environment and carries them into the human ear, which transmits them as sound to the mind or soul (insofar as the likeness between the atoms making the ear and the mind and the atoms making the impressions allows them to interact: see note 78 below). The impressions that carry sound are particular configurations of air atoms.

78 Theophrastus goes on to enumerate other physical factors that Democritus finds optimal for hearing (*De sensu* 56). Ducts throughout the body (but especially the auditory canals) should be dry and empty. Bones should be dense, and the brain well constituted (or well mixed: εὐκράτος) so that the flesh around it is dry: “in those circumstances the sound is concentrated and comes in through the large amount of void, which is free from moisture and well-bored, and is dispersed swiftly and regularly through the body and does not escape” (ἀθρόον γὰρ ἂν οὕτως εἰσιέναι τὴν φωνὴν ἅτε διὰ πολλοῦ κενοῦ καὶ ἀνίκμου καὶ εὐτρήτου εἰσιοῦσαν, καὶ ταχὺ σκίδνασθαι καὶ ὁμαλῶς κατὰ τὸ σῶμα καὶ οὐ διεκπίπτειν ἕξω, trans. Taylor).



<p>(b<sub>3</sub>) περὶ δὲ ὁσμῆς προσαφορίζειν παρήκεν πλὴν τοσοῦτον, ὅτι τὸ λεπτὸν ἀπορρέον ἀπὸ τῶν βαρέων ποιεῖ τὴν ὁδμήν· (<i>Luria</i>)</p>	<p>He omitted any discussion of smell, except to say that a fine effluence from heavy things produces odour ... (<i>Taylor</i>)</p> <p>Democritus, fr. A135 DK = fr. 113 Taylor = fr. 502 Luria</p> <p>Theophr. <i>De sensu</i> 82</p>
<p>(b<sub>4</sub>) τῶν δὲ ἄλλων αἰσθητῶν οὐδενὸς εἶναι φύσιν, ἀλλὰ πάντα πάθη τῆς αἰσθήσεως ἀλλοιουμένης, ἐξ ἧς γίνεσθαι τὴν φαντασίαν. οὐδὲ γὰρ τοῦ ψυχροῦ καὶ τοῦ θερμοῦ φύσιν ὑπάρχειν, ἀλλὰ τὸ σχῆμα 'μεταπίπτον' ἐργάζεσθαι καὶ τὴν ἡμετέραν ἀλλοίωσιν· ὃ τι γὰρ ἂν ἄθρουν ἦι, τοῦτ' ἐνισχύειν ἐκάστωι, τὸ δὲ ἐς μακρὰ διανενημένον ἀναίσθητον εἶναι. (<i>Diels</i>)</p>	<p>As for other sensory objects, he holds that none has an objective reality, but that one and all are effects in our sensuous faculty as it undergoes alteration, and that from this faculty arises the inner presentation. For not even of heat or cold is there for him an objective reality; but configuration, in “undergoing a change,” effects a qualitative alteration in us also; since what is massed together in anything prevails in it, and what is widely diffused is imperceptible. (<i>Stratton</i>)</p> <p>Democritus, fr. A135 DK = fr. 113 Taylor = fr. 441 Luria</p> <p>Theophr. <i>De Sensu</i> 63</p>

These testimonia construe thinking and perception as interactions between three groups of atoms: (1) the atoms that form compounds in the external world-order; (2) the atoms that move about in the atmosphere between compounds; and (3) the soul atoms that animate the body of a living organism. (1) Every compound in the atomist world-order emits atoms in continuous waves (ἅπαντος γὰρ αἰεὶ γίνεσθαι τινα ἀπορροήν [b<sub>1</sub>]; τὸ λεπτὸν ἀπορρέον ἀπὸ τῶν βαρέων ποιεῖ τὴν ὁδμήν [b<sub>3</sub>]),<sup>79</sup> which Democritus refers to

<sup>79</sup> Note the summary of Aetius: Λεύκιππος, Δημόκριτος, Ἐπίκουρος τὴν αἴσθησιν καὶ τὴν νόησιν γίνεσθαι εἰδῶλων ἔξωθεν προσιόντων (Aet. 4.13.1 = fr. 469 Luria).

as images (εἶδωλα: Cic. *Epist. ad fam.* 15.16.1 = fr. 470 Luria, quoted above in note 74).<sup>80</sup> (2) These images are constantly entering the surrounding environment, which takes atomic impressions of them (τὸν ἀέρα τὸν μεταξὺ τῆς ὀψεως καὶ τοῦ ὀρωμένου τυποῦσθαι συστελλόμενον ὑπὸ τοῦ ὀρωμένου καὶ τοῦ ὀρώντος: [b<sub>1</sub>]; τὴν γὰρ φωνὴν εἶναι πυκνουμένου τοῦ ἀέρος [b<sub>2</sub>]; Δημόκριτος καὶ τὸν ἀέρα φησὶν εἰς ὁμοιοσχήμονα θρύπτεσθαι σώματα καὶ συγκαλινδεῖσθαι τοῖς ἐκ τῆς φωνῆς θραύσμασι [Aet. 4.19.13, quoted above in note 77]) and broadcasts these impressions to living organisms (gross material bodies animated by soul atoms). (3) Receiving image impressions transmitted through its sensory orifices (which naturally incorporate void, as in the case of the ear (κατὰ πᾶν μὲν ὁμοίως τὸ σῶμα εἰσιέναι, μάλιστα δὲ καὶ πλεῖστον διὰ τῶν ὠτων, ὅτι διὰ πλείστου τε κενοῦ διέρχεται καὶ ἥκιστα διαμῖναι [b<sub>2</sub>])), the gross material body of the living organism eventually brings them into contact with the soul atoms inside it. Struck by invading impressions (and/or by various atomic structures in the body that receive the impressions, e.g. the visual and auditory cortices described in some detail by Theophrastus in *De sensu* 50, 56 [see notes 76 and 78 above]), soul atoms move into new configurations relative to one another, a material displacement or alteration (ἀλλοίωσις [b<sub>4</sub>]) which the organism experiences either as different kinds of perception (e.g. vision [b<sub>1</sub>], hearing [b<sub>2</sub>], smell [b<sub>3</sub>], or touch [b<sub>4</sub>]) or as thought (a<sub>1</sub>, a<sub>2</sub>), depending on the

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80 The *Etymologicum Genuinum* remembers that he also used the word δείκελον to refer these atomic effluvia emitted by all objects, glossing that word thus: παρὰ δὲ Δημοκρίτῳ κατ' εἶδος ὁμοία τοῖς πράγμασιν ἀπόρροια (*Etym. Gen.* s.v. δείκελον = fr. 828 Luria). The invention of atomic effluvia is treated by Clement of Alexandria as a Democritean improvement on Leucippus (*Protr.* 5.19 = fr. 191 Luria), but the concept of corpuscular emanations as a source of animal perception goes back at least to Empedocles (fr. 17, 88 Inwood): see pages 77-79 in chapter 1 above, and note 102 below.

particular nature of the atoms that an individual process engages (as a particular external stimulus leads to a particular internal apprehension).

For example, if atomic impressions enter the body through the eye and manage to engage the visual apparatus (being the right size and shape to make contact with it), they become optical visions. If they enter through the ear and manage to engage the hearing apparatus (which broadcasts them eventually through the entire body: see note 78 above), they become sound. Some impressions bypass all gross sensory cortices and enter the mind directly, becoming thoughts or dreams (*si nunc, aut si etiam dormientes aliquid animo videre videamur, imagines extrinsecus in animos nostros per corpus irrompere* [a<sub>2</sub>]): it is easy to imagine that these impressions might be made of soul atoms (discussed above on pages 149-159), which would be uniquely small and mobile, allowing them to slip through the body and engage the mind without mediation. While the details of this theory of thought and perception remain vague (and disputed),<sup>81</sup> the basics are clear: the environment mediates (and distorts) atomic impressions created by individual objects, impressions which the living organism happens to perceive and respond to more or less intelligently, owing to the soul atoms that enliven it (enabling corporal movement<sup>82</sup> and

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81 Sassi (1978, 39) disagrees with the interpretation of fr. 109-110 Taylor (= fr. 83, 117, 448, 453, 455, 586 Luria) defended most recently in Taylor (1999, 201-204). Both authorities agree that Democritus separated thought and perception (e.g. in Sext. *Adv. math.* 7.135-140 = fr. 48, 55, 83 Luria). Sassi thinks the atomist followed Alcmaeon in distinguishing the rational mind (in the head) from the irrational soul (scattered throughout the body), citing testimonia like fr. 455 (Aet. 4.4.6, 4.5.1; Theodoret. *Affect.* 5.22), 457 (Philopon. *in De gen. animal.* 100.27), and 458 Luria (Tertull. *De anima* 15); Taylor disputes this with testimonia that scatter the early atomist soul throughout the body without differentiating it, e.g. fr. 454 (Lucret. 3.370) and 456 Luria (Sext. *Adv. math.* 7.349). For our purposes, all that matters is that Democritus discussed perception and thought as functions of the soul, which he imagined as an infusion of spherical atoms animating the cloud of atoms that coheres to form the body of an organism.

82 See fr. 445 Luria, quoted on page 154-152 above.

respiration<sup>83</sup> in addition to perception and thought). It is important to notice that the early atomist soul is not a purely passive recipient of external impressions: it moves constantly on its own (influencing bodily movement and participating in respiration), and its shifting internal composition has a determining effect on perception and thought.<sup>84</sup>

This insight is supported by critical testimonia which reveal Democritus' concern with idiosyncrasies in the perception and thought of an individual organism:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
<p>ὁμοίως δὲ καὶ ἡ περὶ τὰ φαινόμενα ἀλήθεια ἐνίοις ἐκ τῶν αἰσθητῶν ἐλήλυθεν. «τὸ μὲν γὰρ ἀληθὲς οὐ πλῆθει κρίνεσθαι οἴονται προσήκειν οὐδ' ὀλιγότῃτι», τὸ δ' αὐτὸ τοῖς μὲν γλυκὺ γευομένοις δοκεῖν εἶναι, τοῖς δὲ πικρόν· ὥστ' εἰ πάντες ἔκαμνον ἢ πάντες παρεφρόνουν, δύο δ' ἢ τρεῖς ὑγίαινον ἢ νοῦν εἶχον, δοκεῖν ἂν τούτους κάμνειν καὶ παραφρονεῖν, τοὺς δ' ἄλλους οὐ· ἔτι δὲ καὶ πολλοῖς τῶν ἄλλων ζώων ὑγιαίνουσι τάναντία περὶ τῶν αὐτῶν φαίνεσθαι καὶ ἡμῖν, καὶ αὐτῶι δὲ ἐκάστῳ πρὸς αὐτὸν οὐ ταῦτά κατὰ τὴν αἴθησιν ἀεὶ δοκεῖν. ποῖα οὖν τούτων ἀληθῆ ἢ ψευδῆ, ἄδηλον· οὐθὲν γὰρ μάλλον τάδε ἢ τάδε ἀληθῆ, ἀλλ' ὁμοίως. διὸ Δημόκριτός γε φησιν ἥτοι οὐθὲν εἶναι ἀληθὲς ἢ ἡμῖν γ' ἄδηλον. ὅλως δὲ διὰ τὸ ὑπολαμβάνειν φρόνησιν μὲν τὴν αἴθησιν, ταύτην δ' εἶναι ἀλλοίωσιν, τὸ φαινόμενον κατὰ τὴν αἴθησιν ἐξ ἀνάγκης ἀληθές</p>	<p>And similarly some have inferred from the sensible world the truth of appearances. For they think that the truth should not be determined by the large or small number of those who hold a belief, and that the same thing is thought sweet by some who taste it, and bitter by others, so that if all were ill or all were mad, and only two or three were well or sane, these would be thought ill and mad, and not the others. And again, many of the other animals receive impressions contrary to ours; and even to the senses of each individual, things do not always seem the same. Which, then, of these impressions are true and which are false is not obvious; for the one set is no more true than the other, but both are alike. And this is why Democritus, at any rate, says that either there is no truth or to us at least it is not evident. And in general it is because these thinkers suppose knowledge to be</p>

83 See frs. 445, 463, and 466 Luria, quoted on pages 151-155 above.

84 Thus perception only takes place when impressions engage soul atoms via sensory cortices (which cloud perception when impeded: see notes 21 and 78 above), and rational thought only occurs when the soul itself is properly mixed (περὶ δὲ τοῦ φρονεῖν ἐπὶ τοσοῦτον εἴρηκεν ὅτι γίνεται συμμετρῶς ἐχούσης τῆς ψυχῆς κατὰ τὴν κρῆσιν [a<sub>1</sub>]).

εἶναί φασιν. ( <i>Luria</i> )	<p>sensation, and this to be a physical alteration, that they say what happens to our senses must be true.<sup>85</sup> (<i>Ross in Barnes [1984]</i>)</p> <p>Democritus, fr. A112 DK = fr. 177 Taylor = fr. 77, 79-80 Luria</p> <p>Aristot. <i>Metaph.</i> 3.5.1009b1-17</p>
σημεῖον δ' ὥς οὐκ εἰσὶ φύσει τὸ μὴ ταῦτα πᾶσι φαίνεσθαι τοῖς ζώοις ἀλλ' ὃ ἡμῖν γλυκύ, τοῦτ' ἄλλοις πικρὸν καὶ ἑτέροις ὄξυ καὶ ἄλλοις δριμύ, τοῖς δὲ στρυφνὸν καὶ τὰ ἄλλα δ' ὡσαύτως. ἔτι δ' αὐτοὺς μεταβάλλειν τῇ κρήσει κατὰ τὰ πάθη καὶ τὰς ἡλικίας· ἥ καὶ φανερόν ὥς ἡ διάθεσις αἰτία τῆς φαντασίας. ( <i>Diels</i> )	<p>Proof that &lt;these sensory qualities&gt; are not objectively real is found in the fact that they do not appear the same to all creatures: what is sweet to us is bitter to others, and still to others it is sour or pungent or astringent; and similarly of the other &lt;sensory qualities&gt;. Moreover Democritus holds that 'men vary in their composition' according to their condition and age; whence it is evident that a man's physical state accounts for his inner presentation.<sup>86</sup> (<i>Stratton</i>)</p> <p>Democritus, fr. A135 DK = fr. 113 Taylor = fr. 441 Luria</p> <p>Theophr. <i>De sens.</i> 63-64</p>

Up to this point in our study, the early atomist theory of biology has been presented in general terms, outlining a universal portrait of the live organism. As a generic type, the

85 Inasmuch as Theophrastus (fr. 441 Luria) explicitly attributes to Democritus the same ideas that Aristotle (DK68A112) treats as generally common to his predecessors in the Critical Tradition, I feel justified in using Aristotle's summary here (supported by Theophrastus) as a source of insight into Democritus' position.

86 Theophrastus mentions this theory elsewhere, too: ἀλλ' ἐκεῖνο ἄτοπον, ὃ καὶ πρότερον εἵπομεν, εἰ τὸ ἡμῖν κακῶδες καὶ ἄοσμον ἐκείνοις εὖοσμον γίγνεται. τάχα δ' οὐκ ἄτοπον. ὀρώμεν δ' οὖν τοῦτο καὶ ἐφ' ἑτέροις συμβαῖνον οἷον ἐν αὐταῖς εὐθὺ ταῖς τροφαῖς, ὧν μάλιστ' ἂν τις αἰτιάσαιτο τὰς κράσεις ἀνωμαλεῖς γε οὕσας. ἐπεὶ τὰ γε σχήματα Δημοκρίτου, καθάπερ ἐλέχθη, τεταγμένας ἔχοντα τὰς μορφὰς τεταγμένα καὶ τὰ πάθη καίτοι γε οὐκ ἐχρῆν ποιεῖν (*De caus. plant.* 6.17.11 = fr. 91 Luria).

live organism is a temporarily coherent cloud of atoms infused with spherical soul atoms that enable movement, perception, and (in at least some cases) thought. These testimonia show that this generic theory explicitly embraced the particular,<sup>87</sup> acknowledging and attempting to account for idiosyncrasies apparent in individual organisms (as unique instances of the generic type). Thus, Democritus notices that different living organisms perceive the same phenomena differently (σημείον δ' ὥς οὐκ εἰσὶ φύσει τὸ μὴ ταῦτα πᾶσι φαίνεσθαι τοῖς ζώοις [fr. 441 Luria]), with idiosyncratic fluctuations in the inner condition of a particular organism (e.g. sickness, age) affecting its perception and thought (τὸ δ' αὐτὸ τοῖς μὲν γλυκὺ γευομένοις δοκεῖν εἶναι, τοῖς δὲ πικρόν· ὥστ' εἰ πάντες ἔκαμνον ἢ πάντες παρεφρόνουν, δύο δ' ἢ τρεῖς ὑγίαινον ἢ νοῦν εἶχον, δοκεῖν ἂν τούτους κάμνειν καὶ παραφρονεῖν, τοὺς δ' ἄλλους οὐ [DK68A112]; ἀλλ' ὁ ἡμῖν γλυκὺ, τοῦτ' ἄλλοις πικρόν καὶ ἑτέροις ὀξύ καὶ ἄλλοις δριμὺ τοῖς δὲ στρυφνὸν καὶ τὰ ἄλλα δ' ὡσαύτως [fr. 441 Luria]). Notice that the same organism does not always experience the same phenomena the same way: its changing condition alters its experience (ἔτι δ' αὐτοὺς μεταβάλλειν τῇ κρήσει κατὰ τὰ πάθη καὶ τὰς ἡλικίας· ἥ καὶ φανερόν ἢ διάθεσις αἰτία τῆς φαντασίας [fr. 441 Luria]), so that neither the senses nor the thinking soul<sup>88</sup> can be trusted to reveal clear, objective truth about material phenomena (διὸ Δημόκριτός γέ φησιν ἥτοι οὐθὲν εἶναι ἀληθὲς ἢ ἡμῖν γ' ἄδηλον: [DK68A112]). Nevertheless, organisms necessarily rely on perception and thought as tools for getting at truth (ὅλως δὲ

87 Here as elsewhere: see pages 125-135 above.

88 See fr. 79-80 Luria, quoted below on page 165. Without the body (and its sensory interface with the soul), thought would not exist: the soul atoms that enable it would scatter (as they do upon death).

διὰ τὸ ὑπολαμβάνειν φρόνησιν μὲν τὴν αἴσθησιν, ταύτην δ' εἶναι ἀλλοίωσιν, τὸ φαινόμενον κατὰ τὴν αἴσθησιν ἐξ ἀνάγκης ἀληθὲς εἶναί φασιν [DK68A112]): they are the only such tools that nature (or in early atomist terms, ἀνάγκη) has provided.

This leads us to consider early atomist attempts to distinguish between perception and thought (already mentioned on page 159). While some testimonia appear to value thought as more certain than sensation (c), others complicate this picture (d):

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
(c) ἐν δὲ τοῖς Κανόσι δύο φησὶν εἶναι γνώσεις, τὴν μὲν διὰ τῶν αἰσθήσεων τὴν δὲ διὰ τῆς διανοίας, ὣν τὴν μὲν διὰ τῆς διανοίας γνησίην καλεῖ προσμαρτυρῶν αὐτῇ τὸ πιστὸν εἰς ἀληθείας κρίσιν, τὴν δὲ διὰ τῶν αἰσθήσεων σκοτίην ὀνομάζει, ἀφαιρούμενος αὐτῆς τὸ πρὸς διάγνωσιν τοῦ ἀληθοῦς ἀπλανές. λέγει δὲ κατὰ λέξιν· «γνώμης δὲ δύο εἰσὶν ἰδέαι, ἡ μὲν γνησίη, ἡ δὲ σκοτίη· καὶ σκοτίης μὲν τάδε σύμπαντα, ὅψις ἀκοή ὁδμή γεῦσις ψαῦσις· ἡ δὲ γνησίη, ἀποκεκριμένη δὲ ταύτης». εἶτα προκρίνων τῆς σκοτίης τὴν γνησίην ἐπιφέρει λέγων· «ὅταν ἡ σκοτίη μηκέτι δύνηται μήτε ὀρῆν ἐπ' ἔλαττον μήτε ἀκούειν μήτε ὀδμᾶσθαι μήτε γεύεσθαι μήτε ἐν τῇ ψαύσει αἰσθάνεσθαι, ἀλλ' ἐπὶ λεπτότερον <...> <sup>89</sup> » οὐκοῦν καὶ κατὰ τοῦτον ὁ λόγος ἐστὶ κριτήριον, ὃν γνησίην γνώμην καλεῖ. ( <i>Mutschmann</i> )	But in <i>Rules</i> he says that there are two forms of knowledge, one through the senses and the other through thought. Of these he calls the one through thought 'legitimate,' testifying to its reliability for the judgment of truth, while he names the one through the senses 'bastard,' not allowing it to be unerring in the discernment of what is true. He says in so many words: 'There are two forms of judgment, one legitimate, the other bastard. And all these are of the bastard kind: sight, hearing, smell, taste, touch. The other one is legitimate and separated from this.' Then, ranking the legitimate kind before the bastard one, he goes on to say: 'When the bastard one can no longer see any smaller or hear or smell or taste or perceive by touch, but <...> more finely, <...>.' So, according to this man, too, reason is the criterion, which he calls legitimate judgment. ( <i>Bett</i> )  Democritus, fr. B11 DK = fr. D22, 179a Taylor = fr. 83 Luria  Sext. <i>Adv. math.</i> 7.138

<p>(d<sub>1</sub>) ὅς γὰρ οὐδ' ἄρξασθαι δύναται τῆς ἐναργείας χωρίς, πῶς ἂν οὗτος [ὁ λόγος] πιστὸς εἴη, παρ' ἧς ἔλαβε τὰς ἀρχάς, κατὰ ταύτης θρασυνόμενος τοῦτο καὶ Δημόκριτος εἰδώς, ὅποτε τὰ φαινόμενα διέβαλε, «νόμῳ χροίῃ, νόμῳ γλυκύ, νόμῳ πικρόν», εἰπών, «ἐτεῖ δ' ἄτομα καὶ κενόν», ἐποίησε τὰς αἰσθήσεις λεγούσας πρὸς τὴν διάνοιαν οὕτως «τάλαινα φρήν, παρ' ἡμέων λαβοῦσα τὰς πίστεις ἡμέας καταβάλλεις; πτωμά τοι τὸ κατάβλημα». (Luria)</p>	<p>For how could a reasoning, which cannot even get off to a start without evidence, be trustworthy, if it rails against the evidence from which it took its starting points? This is what Democritus knew, too, when he maligned the phenomena. Having said 'by convention there is colour, by convention sweetness, by convention bitterness; in truth there are just atoms and void,' he lets the senses speak to the mind in this way 'wretched mind, taking your evidence from us you overthrow us? Our overthrow is your downfall.' (Frede)</p> <p>Democritus, fr. B125 DK = fr. 79-80 Luria</p> <p>Galen. <i>De medica exper.</i> fr. ed. H. Schöne (Berl. Sitz. Ber. 1901, 1259, 8)</p>
<p>(d<sub>2</sub>) φησὶ γάρ· «ἡμεῖς δὲ τῷ μὲν ἐόντι οὐδὲν ἀτρεκέες συνίεμεν, μεταπίπτον δὲ κατὰ τε σώματος διαθήκην καὶ τῶν ἐπεισιόντων καὶ τῶν ἀντιστηριζόντων». (Luria)</p>	<p>For he says, “In fact we understand nothing precise, but what changes according to the condition of the body and of the things that enter it and that offer resistance to it.” (Bett)</p> <p>Democritus, fr. B9 DK = fr. D17, 179a Taylor = fr. 55 Luria</p> <p>Sext. <i>Adv. math.</i> 7.135</p>

89 Mutschmann's text follows the manuscript tradition, which is corrupt here. DK supplements <δέημι ζητεῖν, τότε ἐπιγίνεται ἡ γνησίη ἅτε ὄργανον ἔχουσα τοῦ νῶσαι λεπτότερον>, and Luria <τι δέημι καταφεύγειν, τότε ἐπιγίνεται ἡ γνησίη>. Bett (2005) merely observes that “clearly there are some words missing here” (30).



(d <sub>3</sub> ) καὶ πάλιν· «δηλοῖ μὲν δὴ καὶ οὗτος ὁ λόγος, ὅτι ἔτεῃ οὐδὲν ἴδμεν περὶ οὐδενός, ἀλλ' ἐπιρυσμὶν ἑκάστοισιν ἡ δόξις». (Luria)	And again: 'This reasoning too shows that in verity we know nothing about anything, but opinion is for everyone a reshaping.' (Bett)  Democritus, fr. B7 DK = fr. D20, 179a Taylor = fr. 49 Luria  Sext. <i>Adv. math.</i> 7.137
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The precise relationship between thought and perception in early atomist thought is uncertain,<sup>90</sup> possibly because the early atomists were not sure what this relationship was.<sup>91</sup> Fragments (d<sub>2</sub>) and (d<sub>3</sub>) confirm the notion (already discussed on pages 160-171) that thought was conceived as analogous to perception, i.e. as the soul's reception of atomic projections emanating from the external environment (οὐδὲν ἀτρεκὲς συνίεμεν, μεταπίπτον δὲ κατὰ τε σώματος διαθήκην καὶ τῶν ἐπεισιόντων καὶ τῶν ἀντιστηριζόντων [d<sub>2</sub>]; ἐπιρυσμὶν ἑκάστοισιν ἡ δόξις [d<sub>3</sub>]). Fragments (c) and (d<sub>1</sub>) take things further, providing evidence for an early atomist distinction between thought and perception. Fragment (c) seems to make thought a source of genuine knowledge, whereas the gross senses produce bastard knowledge (γνώμης δὲ δύο εἰσὶν ἰδέαι, ἡ μὲν γνησίη, ἡ δὲ σκοτίη· καὶ σκοτίης μὲν τάδε σύμπαντα, ὄψις, ἀκοή, ὀδμή, γεῦσις, ψαῦσις. ἡ δὲ γνησίη, ἀποκεκριμένη δὲ ταύτης). Fragment (d<sub>1</sub>), on the other hand, conceives a

<sup>90</sup> See note 81 above, on the undecided question whether Democritus separated the thinking mind from the perceiving soul in the body.

<sup>91</sup> We have already discussed thought as the result of incoming soul atoms impacting the soul (see page 160 above), but it is likewise involved somehow in the reception and interpretation of impressions in the soul that occur through the sensory cortices. At the very least, gross perceptions (e.g. sight, hearing, touch) create disturbances in the structure of the soul that influence how it receives incoming streams of soul atoms: see fr. (d<sub>1</sub>) on the preceding page.

nexus between them such that thought is dependent on grosser material perception, a dependence that would seem to vitiate any claim that genuine knowledge comes from thought (τάλαινα φρήν, παρ' ἡμέων λαβοῦσα τὰς πίστεις ἡμέας καταβάλλεις; πτώμά τοι τὸ κατάβλημα). It is certainly possible that these two fragments represent an unresolved problem in Democritean theory. But careful reading suggests that it would be premature to conclude that they are hopelessly at odds with one another. There is a better way to understand them, a way that sees them contributing to a single, coherent perspective on thought and perception.

The key for a unitary reading of these fragments is fragment (c), which does not actually say that thought provides uncomplicated access to genuine knowledge, only that such knowledge is different from what the gross bodily senses provide (σκοτίης μὲν τάδε σύμπαντα, ὄψις, ἀκοή, ὁδμή, γεῦσις, ψαῦσις. ἢ δὲ γνησίη, ἀποκεκριμένη δὲ <τὰ> ταύτης). The fragment then appears to invoke a perceptive faculty that picks up slighter things, a faculty to which we resort when dealing with things too subtle for our gross material senses (ὅταν ἡ σκοτίη μηκέτι δύνηται μήτε ὀρῆν ἐπ' ἔλαττον μήτε ἀκούειν μήτε ὁδμᾶσθαι μήτε γεύεσθαι μήτε ἐν τῇ ψαύσει αἰσθάνεσθαι, ἀλλ' ἐπὶ λεπτότερον). There is still no promise here (or anywhere in the early atomist corpus as extant) that this subtle faculty offers unobstructed access to genuine knowledge. Since Democritus never claims uncomplicated access to genuine knowledge, he might merely be saying here that thought is pragmatically more reliable than the senses (as anyone who has experienced any kind of sensual illusion would agree: walking into a desert mirage and failing to find water

teaches you to doubt your eyes).<sup>92</sup> This allows assertions like those in fragments (d<sub>1</sub>)-(d<sub>3</sub>), wherein thought, like sensual perception (to which it is intrinsically related according to [d<sub>1</sub>]), is vulnerable to illusion. In other words, all that Democritus offers here is an echo of the epistemological position taken by Xenophanes in DK21B34.<sup>93</sup> Objective reality exists (in the form of atoms and void), and some of our subjective impressions of it may be nearer the truth than others (e.g. impressions which involve more and smaller particles whose shape is less deformed by interaction with atoms from the external environment),<sup>94</sup> but we have no foolproof way of separating true insight completely from false. All knowledge is provisional, subject to revision in light of ongoing experience, and the experience of the individual is inevitably colored by his unique physical constitution

92 Discussing the concept of perceptual illusion current among οἱ περὶ Δημόκριτον, Philoponus illustrates with several examples: (1) the changing colors of a dove's neck in the sun; (2) the misperception of geometric shapes at a distance; (3) the fact that honey tastes bitter to sick people; (4) the fact that the same collection of lines can constitute a different Greek letter based on its orientation (*in De gen. et corr.* 23.2 = fr. 434 Luria). Example (4) appears to derive directly from the early atomists (though the particular letters invoked are different: see Aristot. *Metaph.* 1.4.985b4 and Lact. *Div. inst.* 3.17.23 = fr. 241 Luria, discussed above in note 11), and the others may as well: Lucretius uses (1) and (2) without any attribution (in 2.801 and 4.353, respectively). Here it is worth observing that Aetius credits Democritus with positing the existence of more sensations than things sensed: πλείους μὲν εἶναι τὰς αἰσθήσεις τῶν αἰσθητῶν (4.10.5 = fr. 437 Luria). Accepting this attribution, the role of thought becomes correlation, with the mind (i.e. the thinking aspect of the soul, which is either scattered through the body or localized in the brain; see note 81 above) comparing sensory impressions that may conflict, reading the initial appearance of something against the full array of impressions it emits. Interacting with all the other senses (and with its own impressions too fine to be picked up elsewhere), it perceives that the dove's neck is a dove's neck no matter what color it appears, that squares are really square (for all that they may appear round at a distance), and that honey is still honey when sick people find it bitter. What it comes up with ultimately is not perfect knowledge of things as they are (ἡ γνησίη γνώμη), but a physical reconfiguration (ἐπιρυσμῆ) that occurs as the soul reacts to many incoming data streams—a reaction never entirely free from the taint of the bastard knowledge that informs it.

93 καὶ τὸ μὲν οὖν σαφὲς οὐτις ἀνὴρ ἴδεν οὐδέ τις ἔσται / εἰδὼς ἀμφὶ θεῶν τε καὶ ἄσσα λέγω περὶ πάντων / εἰ γὰρ καὶ τὰ μάλιστα τύχοι τετελεσμένον εἰπών, / αὐτὸς ὅμως οὐκ οἶδε· δόκος δ' ἐπὶ πᾶσι τέτυκται (Sext. *Adv. math.* 7.49.110). This fragment is quoted (with a translation) and discussed on page 41 in chapter 1. Compare DK68A112, quoted in full on page 162 above: Δημόκριτός γε φησιν ἦτοι οὐθὲν εἶναι ἀληθὲς ἢ ἡμῖν γ' ἄδηλον.

94 These concessions to objectivity are what separates Democritus and Leucippus from the thorough-going relativism of Protagoras. See note 3 in the Introduction.

(διάθεσις [fr. 441 Luria, quoted above on page 198]; κρῆσις [fr. 460 Luria = a<sub>1</sub> above]; διαθήκη [fr. 55 Luria = d<sub>2</sub> above]),<sup>95</sup> an atomic construct which changes with time and circumstance. Genuine knowledge exists in practical form merely as an unclear counterpart to bastard knowledge, which latter is all we can ever be really sure that we have. Thus our fragment (c) does not necessarily have to be read as contradicting the rest of the Democritean corpus, which insists repeatedly on human inability to achieve perfect understanding.<sup>96</sup>

It is time to summarize our understanding of early atomist zoology. After creating a world-order (κόσμος), the individual vortex sorts the atoms within that order so that like always goes with like, creating atomic compounds that constitute material objects. Some objects accidentally happen to entrap soul atoms from the cosmic environment—fiery, mobile atoms that cause these objects to live (i.e. move, perceive, and respond to perception with movement). An important consequence of living is that animate objects create other animate objects sharing their form: together with their parents, these objects form individual instances of various animal species analogous to the individual instances of κόσμοι created by particular vortices.<sup>97</sup> (Notice that here again, like goes with like: a horse will not mate with or give birth to a lion, or vice versa.<sup>98</sup>) Perception exists as the ability of the individual animal to receive and respond to atomic impressions from its

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95 Here it is perhaps significant to notice that the Thrasyllan list credits an ethical book *Περὶ τῆς τοῦ σοφοῦ διαθέσεως* to Democritus (Diog. 9.46 = fr. cxv Luria).

96 To fragments (d<sub>1</sub>)-(d<sub>3</sub>), add the saying remembered by Diogenes Laertius (9.72), Cicero (*Acad. priora* 2.10.32), et al.: ἐτεῖμι δὲ οὐδὲν ἴδμεν· ἐν βυθῶι γὰρ ἡ ἀλήθεια (fr. 51 Luria). The argument offered here for reconciling fragments (c) and (d) agrees substantially with Taylor (1999), 204-206.

97 See the discussion of general and particular on pages 126-130 above.

98 See fr. 561 Luria, quoted in note 72 above.

environment. All forms of perception involve atomic collisions with soul atoms trapped inside the animal's body, collisions in which the soul takes some kind of impression from atoms bumping into it. The keenest form of perception facilitated by soul atoms (as far as we know) is thought, which occurs when the soul takes impressions of incoming atomic effluvia that are too subtle to be picked up by the atomic structures that enable the gross material senses (e.g. sight, smell, touch, taste, hearing). All perception is determined by the constitution of the animal perceiving: it can only construe the world as its faculties permit. Since these faculties are inevitably limited<sup>99</sup> and mutate—changing with time and unforeseeable circumstances (such as sudden illness)—its perception is necessarily limited and subjective. From this perspective, it is plausible to imagine atoms too large or too small to be perceived,<sup>100</sup> and to say (as Democritus does) that the only objective reality is atoms and void, with everything else existing only conventionally.<sup>101</sup> Another important observation is that every perception is an instance of like going with like: animals perceive other objects only insofar as these objects emit atomic effluvia capable of interacting with the atoms that make up the animal.<sup>102</sup> This confirms the principle of

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99 Unlike Xenophanes' god (see pages 38-39 in chapter 1 above), living organisms in the atomic universe cannot perceive equally with their entire bodies, and they cannot perceive everything.

100 Atoms too small to perceive individually are normal to the early atomist worldview; see fr. 204-206 Luria. Thought can perceive subtly enough to recognize that these imperceptible atoms exist, but even it cannot distinguish them individually; see fr. 209 Luria: Δημόκριτος, ὥι μετὰ πλείστον Ἐπίκουρος ἠκολούθησεν, ἀρχὰς τῶν ὄντων σώματα ἄτομα, λόγῳ δὲ θεωρητά (Euseb. *Praep. Evang.* 14.14). The doxography also records Democritus positing the existence of enormous atoms (including some as large as entire κόσμοι), whose size puts them beyond our capacity to perceive directly; see fr. 207 Luria, with the commentary of Mugler (1959, 14-16) and Makin (1993, 62-84). For our purposes, the important thing to notice here is the consistent assertion that objective reality is something that living things cannot perceive clearly. All that any living being perceives are more or less distorted reflections of objective reality, reflections that exist as transitory impressions in its soul, which is a moving collection of small, spherical atoms animating the body.

101 See fr. 51, 55, 79, 90, and 93 Luria, quoted above on pages 133-134.

102 Aetius attests that this insight was common to other thinkers in the Critical Tradition: Παρμενίδης,

homogeneity as a crucially important part of the material necessity responsible for all phenomena in the atomic multiverse. Like particles going with like is a generalized expression of what happens in every particular episode of atomic interaction, whether we are talking about the evolution of an entire world-order or that of an individual complex object (such as a living organism, e.g. a human being).<sup>103</sup>

### **Conclusion: Early Atomist Ethics (2.4)**

So far, this chapter has revealed the early atomists as typical thinkers in the Critical Tradition. Like their fellows discussed in chapter 1, Leucippus and Democritus construct a universal narrative discussing and relating all things known and knowable to

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Ἐμπεδοκλῆς, Ἀναξαγόρας, Δημόκριτος, Ἐπίκουρος, Ἡρακλείδης παρὰ τὰς συμμετρίας τῶν πόρων τὰς κατὰ μέρος αἰσθήσεις γίνεσθαι τοῦ οἰκείου τῶν αἰσθητῶν ἐκάστου ἐκάστη ἐναρμόττοντος (Aet. 4.9.6 = fr. 437 Luria). Sassi (1978, 51-52) confirms a striking likeness between Democritean (fr. 476 Luria; see also notes 76, 77, and 78 above) and Empedoclean sensory cortices (πόροι in fr. 88 Inwood; see note 111 in chapter 1). Turning to the early atomists specifically, remember the summary of Theophrastus (quoted with context in note 21 above): τὰ γὰρ ὁμόφυλα μάλιστα ἕκαστον γνωρίζειν (*De sensu* 50). See also fr. 472 Luria, wherein Aristotle concludes a discussion of Democritean εἰδῶλα with the following observation to explain why we dream about familiar people: τὸ δέ τινας εὐθυονεῖρους εἶναι καὶ τὸ τοὺς γνωρίμους περὶ τῶν γνωρίμων μάλιστα προορᾶν συμβαίνει διὰ τὸ μάλιστα τοὺς γνωρίμους ὑπὲρ ἀλλήλων φροντίζειν· ὥσπερ γὰρ πόρρω ὄντων τάχιστα γνωρίζουσι καὶ αἰσθάνονται, οὕτω καὶ τῶν κινήσεων· αἱ γὰρ τῶν γνωρίμων γνωριμώτεραι κινήσεις (*De divinat. in somn.* 2.464a). The common thread here is that all forms of perception (including thought) rely on the principle of homogeneity (see fr. 316 Luria, quoted and discussed on pages 127-138 above): according to the atomists, we perceive (and think about) things (1) that happen to be in our personal environment and (2) that have atomic structures enough like ours that we can interact with them.

103 The likeness between organism and world in early atomist thought is very striking. Each is an orderly arrangement of atoms, a κόσμος that evolves over time and produces (man by sexual reproduction, world by dissolution into the ἄπειρον where atoms and void create vortices) repeating iterations of itself—endless particular variations on a general theme. (Note fr. 527 Luria: ἄνθρωπος ἐξέσσεται ἐξ ἀνθρώπου παντός [Galen. *De defin. med.* 439].) In light of this, it may be significant that Democritus is supposed to have referred to the individual human being as a small world: ἐν τῷ ἀνθρώπῳ μικρῷ κόσμῳ ὄντι κατὰ τὸν Δημόκριτον (David, *Proleg.* 38.14 = fr. 10 Luria). I prefer Luria's validation of this attribution (pp. 969, 983-984) to the skepticism of Finkelberg (1998, 120-122), though I do not dispute Finkelberg's point that in fifth-century usage the word κόσμος means *order* without necessarily meaning *world* (i.e. the particular order comprised by the earth, biological life, and celestial bodies). From an early atomist perspective, the distinction Finkelberg argues for appears immaterial, a debate about conventions, since the early atomist world like every subordinate order in it, is merely a collection of atomic clouds moving in a more or less regular fashion (i.e. following a natural order where like necessarily goes with like, etc.).

man (both the individual human being and collective mankind). Like other Critical narratives, the early atomist one includes a cosmogony (section 2.1 above). This atomist cosmogony is dependent on necessity (section 2.2 above), which sorts matter in vortices to create endless particular variations on common generic themes across an infinite multiverse of atoms and void. The nature of atoms and void as imagined by the early atomists is such that generic events necessarily recur over and over (e.g. as like particles go constantly with like), even as specific instances of necessary events show some irregular variation (e.g. when oblong pebbles are sorted into piles of different shape on different beaches; see pages 128-131 above). Besides creating infinite κόσμοι, the endless recurrence of necessary events facilitates the evolution of complex atomic forms that interact with one another within κόσμοι—e.g. living organisms, including human beings (section 2.3 above). Thus, like other Critical narratives, the early atomist one includes a zoogony and an anthropogony. As in the constitution of the early atomist κόσμος, so in the constitution of organic life necessity plays an important role: once more, generic events recur (e.g. when like animals herd and mate with like to produce conspecific offspring), but again they show idiosyncratic variation in particular instances (e.g. when donkeys and horses mate to produce mules, or when the offspring of two normal human beings has more or less than the usual five digits on each hand).<sup>104</sup>

In light of chapter 1, we expect the early atomists to have an ethical perspective that complements and coheres with this physical theory.<sup>105</sup> In light of this chapter, we

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<sup>104</sup> See fr. 561 (quoted in note 72 above) and 103 Luria (quoted on pages 125-137 above).

<sup>105</sup> See note 158 in chapter 1.

expect that ethical perspective to involve material necessity (ἀνάγκη), which is omnipresent in atomist physics and biology.<sup>106</sup> As matters stand, the early atomist corpus contains several fragments confirming (1) that Democritus (at least) built an ethical outlook upon the physical and biological foundation that we have set forth in this chapter, and (2) that this outlook depended on necessity. Consider the following smoking guns:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
Δημόκριτος μὲν τοίνυν, ἀνὴρ οὐ φυσιολογώτατος μόνον τῶν ἀρχαίων, ἀλλὰ καὶ τῶν ἱστορουμένων οὐδενὸς ἦττον πολυπράγμων, μουσικὴν φησι νεωτέραν εἶναι καὶ τὴν αἰτίαν ἀποδίδωσι λέγων μὴ ἀποκρίναι τάναγκαῖον, ἀλλὰ ἐκ τοῦ περιεῦντος ἤδη γενέσθαι.	Democritus, a man who was not only the most learned about nature of all the ancients but no less industrious than any other inquirer, says that music is more recent, and identifies its cause, saying that it was not singled out by necessity, but arose as a result of plenty. ( <i>Taylor</i> )  Democritus, fr. B144 DK = fr. 213 Taylor = fr. 568 Luria  Philod. <i>De musica</i> 4.31
γινώσκειν χρεῶν ἀνθρωπίνην βιοτὴν ἀφαιρὴν τε ἐοῦσαν καὶ ὀλιγοχρόνιον πολλῆσίιν τε κηρσὶ συμπεφυρμένην καὶ ἀμηχανίῃσιν, ὅπως ἂν τις μετρίης τε κτήσιος ἐπιμέλῃται καὶ μετρήται ἐπὶ τοῖς ἀναγκαίοις ἢ ταλαιπωρίῃ.	Bisogna prendere consapevolezza della fragilità e della brevità della vita umana, che si rivela anche intessuta di molteplici sciagure e bisogni, in modo da curarsi di avere beni di proprietà misurati e da commisurare le tribolazioni inevitabili alle necessità vitali. ( <i>Luria, Krivushina</i> )  Democritus, fr. B285 DK = fr. D150 Taylor = fr. 646 Luria  Stob. 4.34.65

<sup>106</sup> Remember the saying of Leucippus quoted on page 119 and discussed on pages 119-141 above: οὐδὲν χρήμα ματὴν γίνεται, ἀλλὰ πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης (DK67B2).



<p>φησὶν ἐκεῖνος (ὁ Δημόκριτος) ἐξιέναι (sc. τὰ εἶδωλα) τοὺς φθονοῦντας, οὐτ' αἰσθήσεως ἅμοιρα παντάπασιν οὔθ' ὀρμῆς, ἀνάπλεά τε τῆς ἀπὸ τῶν προῖεμένων μοχθηρίας καὶ βασκανίας, μεθ' ἧς ἐμπλασσόμενα καὶ παραμένοντα καὶ συνοικοῦντα τοῖς βασκαινομένοις ἐπιτάρττειν καὶ κακοῦν αὐτῶν τό τε σῶμα καὶ τὴν διάνοιαν·</p>	<p>Ce philosophe affirme que les simulacres émis par les êtres méchants ne sont pas essentiellement exempts de sentiment ni d'intention, et qu'ils sont au contraire chargés de toute la malignité et de toute l'envie de celui dont ils émanent; c'est avec elles qu'ils s'impriment, demeurent et s'installent dans la victime, dont ils troublent et corrompent ainsi le corps en même temps que l'esprit. (<i>Fuhrmann</i>)</p> <p>Democritus, fr. A77 DK  = fr. 133b Taylor  = fr. 579 Luria</p> <p>Plut. <i>Quaest. conv.</i> 5.7.6, p. 682f</p>
<p>Δημόκριτος δὲ εἶδωλά τινά φησιν ἐμπελάζειν τοῖς ἀνθρώποις καὶ τούτων τὰ μὲν εἶναι ἀγαθοποιὰ τὰ δὲ κακοποιά. ἔνθεν καὶ εὔχετο εὐλόγχων τυχεῖν εἰδώλων. εἶναι δὲ ταῦτα μεγάλα τε καὶ ὑπερφυῆ καὶ δύσφθαρτα μὲν, οὐκ ἄφθαρτα δέ, προσημαίνειν τε τὰ μέλλοντα τοῖς ἀνθρώποις θεωρούμενα καὶ φωνὰς ἀφιέντα.</p>	<p>Democritus says that some <i>eidôla</i> encounter people, and of these some are beneficial and some harmful; hence he prayed to find propitious <i>eidôla</i>. These are huge and gigantic and difficult to destroy, but not indestructible, and they foretell future events to people by appearing to them and speaking. (<i>Taylor</i>)</p> <p>Democritus, fr. B166 DK  = fr. 175b Taylor  = fr. 472a Luria</p> <p>Sext. <i>Adv. math.</i> 9.19</p>

Fragments B144 and B285 DK attest that Democritus saw human culture developing as a response to necessary conditions, with some arts arising early (to meet essential needs, like the need for food and shelter) and others later (to meet superfluous needs, like the appetite for entertainment filled by music—an appetite that could not exist if essential needs were not already met). This generalizing perspective appears complemented by a particular one in fragments A77 and B166 DK, where Democritus sees the ethical

character of the individual ἄνθρωπος being shaped or influenced to some degree by atomic effluvia that leave impressions upon his soul. This chapter has already shown how necessity creates conditions that enable both of these events (the generic evolution of human culture, and the particular evolution of an individual human being). From this, it appears that ethics and physics are not unrelated concerns in early atomist thought, contrary to what some modern scholars have concluded.<sup>107</sup> At the very least, the atomist appears to be employing familiar ideas when he makes the transition from physics to ethics: there is no hard line apparent between the ethical necessity of these fragments and the physical necessity discussed above in sections 2.2-3.

This is particularly evident if we remember fr. 103 Luria (quoted and discussed on pages 125-126 above), wherein Democritean necessity produces some things that must be the way they are (things that occur ἐξ ἀνάγκης), and other things whose state is more mutable (things that occur ἐνδεχομένως). In that fragment, man is necessarily a living animal (a generic truth that necessity guarantees absolutely), but the particular state of his life in individual instances admits a great deal of variation (particular truths that necessity enables without minutely predetermining). Compare fr. B144 DK (quoted above), which recognizes and distinguishes (1) arts that are absolutely necessary (presumably those that provide mankind with essential amenities like food and shelter), and (2) arts that are inessential (music): in the language of fr. 103, arts of the first class exist ἐξ ἀνάγκης, while those of the second exist ἐνδεχομένως. The identity of physical and ethical

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107 E.g. Barnes (1982): “[P]hysics and ethics were so successfully compartmentalized in Democritus’ capacious mind that he never attended to the larger issues which their cohabitation produces” (535).

necessity here is not specious: necessity constructs the body such that it absolutely needs food to maintain its physical integrity, while its ability to produce music (an ability created by the same necessity) serves no absolute physical need (and so comes about late, as a kind of accidental cosmic afterthought).

Even better, if we look for a moral perspective that treats the individual human being as a unique unit (as in fragments A77 and B166), fr. 103 Luria has Democritus listing personal ethical choices, e.g. the decision to travel or settle in a particular city, as occurring ἐνδεχομένως (just like instances of humans born with more or less than the normal five digits on each hand). Thus Democritean ethics, whether collective or individual, seems to exist in the realm of supple determinism, the same realm where physical variation lives. It is a realm shaped but not minutely predetermined by the universal governing principle of material necessity (as discussed in sections 2.2-3). It is a realm where general realities exist, necessarily, and admit particular variations.

At this point, we have seen enough evidence to conclude that Democritus follows the Critical Tradition in crafting a universal perspective,<sup>108</sup> one that encompasses both physics and ethics. Democritean physics create a world-order (διάκοσμος) that explicitly includes and enables human behavior, as the following chapters will illustrate.

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108 Compare atomist necessity (and its all-encompassing reach) with Anaximander's justice (δίκη) and retribution (τίσις: pages 32-42 in chapter 1), Heraclitus' reason (λόγος) and war (πόλεμος: pages 47-58), Parmenides' Being (τὸ ὄν: pages 61-70), Empedocles' love (φιλότης) and strife (νεῖκος: pages 69-77), Anaxagoras' mind (νοῦς: pages 84-93), and Philolaus' harmony (ἁρμονία: page 96). Though Xenophanes' place in this company is less secure, his μέγιστος θεός might unite ethics with physics, since the divine should be accorded due ethical reverence (χρή δὲ πρῶτον μὲν θεὸν ὑμνεῖν εὐφρονας ἄνδρας εὐφρήμοις μύθοις καὶ καθαροῖσι λόγοις σπείσαντας δὲ καὶ εὐξαμένους τὰ δίκαια δύνασθαι πρήσσειν ... θεῶν <δὲ> προμηθεῖην αἰὲν ἔχειν ἄγαθον [DK21B1.15-16, 24]), and the greatest god has the capacity to exert universal physical influence (ἀλλ' ἀπάνευθε πόνοιο νόου φρενὶ πάντα κραδαίνει [DK21B25]).

## CHAPTER 3. COSMIC ΠΥΣΜΟΙ: THE FOUNDATIONS OF DEMOCRITEAN ETHICAL THEORY

### Putting Democritean Ethics in Context (3.1)

The foregoing chapters have given us a contextualized picture of the διάκοσμος that Plutarch finds typical of philosophers in the Critical Tradition (*Adv. Colot.* 1114b-c).<sup>1</sup> As we have seen, the Critical διάκοσμος offers a verbal model of the universe, a master narrative aspiring to contain and relate everything known and knowable to early Ionians. In telling the story of the origin and development of the Ionian world-order (κόσμος), the Critical διάκοσμος naturally includes stories about the origin and development of human beings (as biological and social animals). Some of these stories survive at least partially intact in the historical record, as we have already noticed.<sup>2</sup> This chapter will consider these stories historically as forerunners and/or parallels to the Democritean story of humanity—an early atomist narrative of human origins and development that provides contextual information important for interpreting the ethical sayings attributed to Democritus (as we will see).

Not all Critical philosophers are on record thinking historically about the origin and development of human ethics. As extant, Heraclitus, Parmenides, and Philolaus seem more interested in timeless reality than in historical development (which for them is an endless recurring cycle of fluctuations in fire, Being, or harmony). In the material extant for us to read, these thinkers are concerned primarily with continuity (how things stay the

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<sup>1</sup> See pages 16-27 above in the Introduction.

<sup>2</sup> See the discussions of anthropogony in chapters 1 and 2.

same over time), rather than with discontinuity (how things change in a way that does not relate neatly to what came before).<sup>3</sup> An early instance of discontinuity in the Critical Tradition comes from Anaximander's account of human evolution (discussed briefly in chapter 1, pages 31-32). As the first of several discontinuous narratives explaining human origins (anthropogony) and development (ethical evolution that culminates in the creation of cities, i.e. politogony) from a Critical perspective, it warrants attention:

TEXT (DK)	TRANSLATION (KRS)
(a) Ἀναξίμανδρος ἐν ὑγρῷ γεννηθῆναι τὰ πρῶτα ζῶια φλοιοῖς περιεχόμενα ἀκανθώδεσι, προβαινούσης δὲ τῆς ἡλικίας ἀποβαίνειν ἐπὶ τὸ ξηρότερον καὶ περιρρηγνύμενου τοῦ φλοιοῦ ἐπ' ὀλίγον χρόνον μεταβιῶναι.	Anaximander said that the first living creatures were born in moisture, enclosed in thorny barks; and that as their age increased they came forth on to the drier part and, when the bark had broken off, they lived a different kind of life for a short time.  Anaximander, fr. A30 DK = fr. 133 KRS  Aet. 5.19.4
(b) ἔτι φησὶν, ὅτι κατ' ἀρχὰς ἐξ ἀλλοειδῶν ζώων ὁ ἄνθρωπος ἐγεννήθη, ἐκ τοῦ τὰ μὲν ἄλλα δι' ἑαυτῶν ταχὺ νέμεσθαι, μόνον δὲ τὸν ἄνθρωπον πολυχρονίου δεῖσθαι τιτηνήσεως διὸ καὶ κατ' ἀρχὰς οὐκ ἄν ποτε τοιοῦτον ὄντα διασωθῆναι.	Further he says that in the beginning man was born from creatures of a different kind; because other creatures are soon self-supporting, but man alone needs prolonged nursing. For this reason he would not have survived if this had been his original form.  Anaximander, fr. A10 DK = fr. 134 KRS  [Plut.] <i>Strom.</i> 2

3 Here I am not claiming that Heraclitus, Parmenides, and Philolaus fail to incorporate any idea of discontinuity into their διάκοσμοι. I am merely noting that what survives of their work seems more focused on continuity than discontinuity (which appears more prominently elsewhere in the Critical Tradition, perhaps accidentally, in authors whom I am about to examine).

<p>(c) <i>Anaximander Milesius videri sibi ex aqua terraque calefactis exortos esse sive pisces seu piscibus simillima animalia; in his homines concrevisse fetusque ad pubertatem intus retentos; tunc demum ruptis illis viros mulieresque qui iam se alere possent processisse.</i></p>	<p>Anaximander of Miletus conceived that there arose from heated water and earth either fish or creatures very like fish; in these man grew, in the form of embryos retained within until puberty; then at last the fish-like creatures burst and men and women who were already able to nourish themselves stepped forth.</p> <p>Anaximander, fr. A30 DK = fr. 135 KRS</p> <p>Censor. 4.7</p>
<p>(d) τὰ δὲ ζῶια γίνεσθαι &lt;ἐξ ὕγρου&gt; ἑξατμιζομένου ὑπὸ τοῦ ἡλίου. τὸν δὲ ἄνθρωπον ἐτέρῳ ζώῳ γεγονέναι, τούτεστι ἰχθύι, παραπλήσιον κατ' ἀρχάς.</p>	<p>Living creatures came into being from moisture evaporated by the sun. Man was originally similar to another creature – that is, to a fish.</p> <p>Anaximander, fr. A11 DK = fr. 136 KRS</p> <p>Hippol. <i>Refut.</i> 1.6.6</p>
<p>(e) διὸ καὶ σέβονται (sc. Σύροι) τὸν ἰχθύν ὡς ὁμογενῇ καὶ σύντροφον, ἐπεικέστερον Ἀναξιμάνδρου φιλοσοφοῦντες· οὐ γὰρ ἐν τοῖς αὐτοῖς ἐκεῖνος ἰχθύς καὶ ἄνθρωπος, ἀλλ' ἐν ἰχθύσιν ἐγγενέσθαι τὸ πρῶτον ἄνθρωπος ἀποφαίνεται καὶ τραφέντας, ὥσπερ οἱ γαλεοί, καὶ γενομένους ἱκανοὺς ἑαυτοῖς βοηθεῖν ἐκβῆναι τήνικαῦτα καὶ γῆς λαβέσθαι.</p>	<p>Therefore they [the Syrians] actually revere the fish as being of similar race and nurturing. In this they philosophize more suitably than Anaximander; for he declares, not that fishes and men came into being from the same parents, but that originally men came into being inside fishes, and that having been nurtured there – like sharks – and having become adequate to look after themselves, they then came forth and took to the land.</p> <p>Anaximander, fr. A30 DK = fr. 137 KRS</p> <p>Plut. <i>Symp.</i> 8.8.4, p. 730e</p>

For our purposes, there are two important things to notice in Anaximander's theory of human evolution. First is the idea that human life changes over time, moving from a primitive state, in which ancestral humans resembled fish or were born from fish-like creatures, to a more modern one on dry land (ἐν ὑγρῷ γεννηθῆναι τὰ πρῶτα ζῶια ... προβαινούσης δὲ τῆς ἡλικίας ἀποβαίνειν ἐπὶ τὸ ξηρότερον ... ἐπ' ὀλίγον χρόνον μεταβιῶναι [a]; κατ' ἀρχὰς ἐξ ἀλλοειδῶν ζώων ὁ ἄνθρωπος ἐγεννήθη [b]; *ex aqua terraque calefactis exortos esse sive pisces seu piscibus simillima animalia; in his homines concrevisse ... tunc demum ruptis illis viros mulieresque ... processisse* [c]; τὸν δὲ ἄνθρωπον ἐτέρῳ ζώῳ γεγονέναι, τουτέστι ἰχθύι, παραπλήσιον κατ' ἀρχὰς [d]; ἀλλ' ἐν ἰχθύσιν ἐγγενέσθαι τὸ πρῶτον ἄνθρώπους ... ἐκβῆναι τῆνικαῦτα καὶ γῆς λαβέσθαι [e]). Second is the recognition that human beings require nourishment: the first generation of mankind takes this from its fishy ancestors (μόνον δὲ τὸν ἄνθρωπον πολυχρονίου δεῖσθαι τιθηνήσεως διὸ καὶ κατ' ἀρχὰς οὐκ ἂν ποτε τοιοῦτον ὄντα διασωθῆναι [b]; *in his homines concrevisse fetusque ad pubertatem intus retentos* [c]; ἀλλ' ἐν ἰχθύσιν ἐγγενέσθαι τὸ πρῶτον ἄνθρώπους ἀποφαίνεται καὶ τραφέντας [e]); eventually, mankind becomes self-sufficient (*tunc demum ruptis illis viros mulieresque qui iam se alere possent processisse* [c]; καὶ γενομένους ἱκανοὺς ἑαυτοῖς βοηθεῖν ἐκβῆναι τῆνικαῦτα καὶ γῆς λαβέσθαι [e]).

What matters here are not the details of human evolution as imagined by Anaximander (details which are rather hazy), but the stark outlines: (i) *human life is not categorically separate from other animal life*; (ii) *life was not always as it is now*; (iii) *nourishment is a persistent part of life, a need which is serviced by different means over*

time (as life changes). These insights constitute important evidence for the kind of historical thinking that some Critical thinkers engage in when they come to consider human biology and ethics.

From the evidence we have, Xenophanes, Empedocles, and Anaxagoras appear to work from the same basic playbook as Anaximander in this area (human biology and ethics). For Xenophanes, (i) humans are not categorically different from animals, which would make gods in their own image if they could;<sup>4</sup> (ii) life is a historical process marked by change, as people discover better over time;<sup>5</sup> and (iii) allocating nourishment (σῖτα and associated prizes) is a central ethical concern (a concern which the poet proposes to serve better with σοφίη than predecessors and contemporaries have with ῥώμη: note that his desire to change custom points directly toward its mutability).<sup>6</sup> Similarly, in the world of Empedocles, (i) humans and animals are fundamentally the same, sharing δαίμονες;<sup>7</sup> (ii) life is a historical process marked by change, as love puts things together more or less

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4 καὶ σώματ' ἐποίουν / τοιαῦθ' οἷόνπερ καὶ τοὶ δέμας εἶχον ἕκαστοι (DK21B15 = Clem. *Strom.* 5.110). See pages 40-50 above in chapter 1.

5 ἀλλὰ χρόνῳ ζητοῦντες ἐφευρίσκουσιν ἄμεινον (DK21B18 = Stob. 1.8.2). See page 43 above in chapter 1.

6 ἀλλ' εἰ μὲν ταχὺτῆτι ποδῶν νίκην τις ἄροιτο / ... ἀστοῖσιν κ' εἶη κυδρότερος προσορᾶν, / καὶ κε προεδρίην φανερὴν ἐν ἀγῶσιν ἄροιτο, / καὶ κεν σῖτ' εἶη δημοσίων κτεάνων / ἐκ πόλιος καὶ δῶρον ὃ οἱ κειμήλιον εἶη ... / οὐκ ἔων ἄξιος ὥσπερ ἐγὼ ῥώμης γὰρ ἁμείνων ἀνδρῶν ἢ δ' ἵππων ἡμετέρῃ σοφίῃ ... / σμικρὸν δ' ἂν τι πόλει χάρμα γένοιτ' ἐπὶ τῷ, / εἴ τις ἀεθλεύων νικῶι Πίσαιο παρ' ὄχθας / οὐ γὰρ παίνει ταῦτα μυχοῦς πόλιος (DK21B2.1, 6-9, 17-22 = Athen. 10.413f). The crucial point here is not that Xenophanes created an explicit account of the origin and development of ethics (if he did, it is lost), but that he could have: his fragments contain the foundation of such a story, just like the doxographical summaries of Anaximander's biology. Together, they represent a kind of early Critical perspective which later thinkers developed into more detailed narratives.

7 ἐγὼ γενόμεν κοῦρός τε κόρη τε / θάμνος τ' οἰωνός (fr. 111 Inwood = Hippol. *Refut.* 1.3.1). μορφὴν δ' ἀλλάξαντα πατὴρ φίλον υἱὸν αἶρας / σφάζει ἐπευχόμενος μέγα νήπιος (fr. 128.1-2 Inwood = Sext. *Adv. math.* 9.129). For more on fr. 111, see note 103 above in chapter 1; for more on fr. 128, see page 73 above in chapter 1.



at random<sup>8</sup> and strife pulls them apart,<sup>9</sup> creating all kinds of impermanent beings whose existence only vaguely resembles that of their ancestors or descendants,<sup>10, 11</sup> and (iii) human nourishment changes over time, with primitive men offering Aphrodite bloodless sacrifices unlike their modern descendants, who kill and eat animals in honor of deity.<sup>12</sup> Empedocles urges his audience to alter this practice,<sup>13</sup> presuming (like Xenophanes) the mutability of human ethics. In the διάκοσμος of Anaxagoras, (i) humans are animals, defined (like other animals) by their possession of ψυχή;<sup>14</sup> (ii) life is discontinuous, with

8 See fr. 65.3 Inwood: ταῦτά τε συμπίπτεσκον, ὅπῃ συνέκυρσεν ἕκαστα (Simpl. in Cael. 586.7).

9 See fr. 38.1-7 Inwood: τοῦτο μὲν ἀμ' βροτέων μελέων ἀριδείκετον ὄγκον / ἄλλοτε μὲν φιλότῃτι συνερχόμεν' εἰς ἓν ἅπαντα / γυῖα, τὰ σῶμα λέλογχε, βίου θαλέθοντος ἐν ἀκμῇ / ἄλλοτε δ' αὖτε κακῇσι διατμηθέντ' ἐρίδεσσι / πλάζεται ἄνδιχ' ἕκαστα περὶ ῥηγμῖνι βίοιο. / ὥσαύτως θάμνοισι καὶ ἰχθύσιν ὕδρομελάθοις / θηροσί τ' ὀρειλεχέεσσιν ἰδὲ πτεροβάμοσι κύμβαις (Simpl. in Phys. 1124.7). Notice the parity between animals and men here (not to mention plants): all are the results of love and strife mingling and separating wandering limbs. As different combinations of the same raw materials acting under the same cosmic influences, they are fundamentally similar.

10 E.g. πολλὰ μὲν ἀμφιπρόσωπα καὶ ἀμφίστερνα φύεσθαι, / βουγενῇ ἀνδρόπρωιρα, τὰ δ' ἔμπαλιν ἐξαντέλλειν / ἀνδροφυῇ βούκρانا (fr. 66 Inwood = Ael. N. a. 16.299). See also fr. 67 Inwood: ἐννυχίους ὄρηκας ἀνήγαγε κρινόμενον πῦρ, / οὐλοφυεῖς μὲν πρῶτα τύποι χθονὸς ἐξανέτελλον, / ἀμφοτέρων ὕδατός τε καὶ εἶδος αἴσαν ἔχοντες / τοὺς μὲν πῦρ ἀνέπεμπε θέλον πρὸς ὁμοῖον ἰκέσθαι, / οὔτε τί πω μελέων ἐρατὸν δέμας ἐμφαίνοντας, / οὔτ' ἐνοπὴν οὔτ' αὖ ἐπιχώριον ἀνδράσι γυῖον (Simpl. in Phys. 381.29). As with the human-headed oxen and the ox-headed men in fr. 66, the life experienced by these primitive human shoots cannot be the life familiar to the Ionians, a life which presupposes anatomically modern humans. For more about the evolution of different life-forms (including humans) in the world-order imagined by Empedocles, see pages 70-80 above in chapter 1, and fr. 61, 64-65, 71-72 Inwood.

11 Like Xenophanes (DK21B18), Empedocles also explicitly recognizes the adaptive ability to learn as an important human attribute. See e.g. fr. 25.14 Inwood (μάθῃ γάρ τοι φρένας αὔξει [Simpl. in Phys. 157.25]) and 15 Inwood (παύσεις δ' ἀκαμάτων ἀνέμων μένος ... / ἄξεις δ' ἐξ Αἰδαο καταφθιμένου μένος ἀνδρός [Diog. 8.59]). The experience of Empedocles' student alters his nature discontinuously, giving him special power over natural phenomena, power that he cannot possess until his mind is enlarged as a result of studying with the poet-philosopher.

12 τὴν οἱ γ' εὐσεβέεσσιν ἀγάλμασιν ἰλάσκοντο / ... σμύρνης τ' ἀκρήτου θυσίαις λιβάνου τε θυώδους ... ἀλλὰ μύσος τοῦτ' ἔσκεν ἐν ἀνθρώποισι μέγιστον, / θυμὸν ἀπορραΐσαντας ἐέδμεναι ἡέα γυῖα (fr. 122.4-10 Inwood = Porphy. De abst. 2.20, 27). See also fr. 126, 128 Inwood, which are quoted in full and discussed briefly on pages 85-79 above in chapter 1.

13 οὐ παύσεσθε φόνοιο δυσηχέος; (fr. 126 Inwood = Sext. Adv. math. 9.119).

14 καὶ ἀνθρώπους τε συμπαγῆναι καὶ τὰ ἄλλα ζῶια ὅσα ψυχὴν ἔχει (DK59B4a = Simpl. in Phys. 34.18-20, 27). See also DK59B12: καὶ ὅσα γε ψυχὴν ἔχει καὶ τὰ μείζω καὶ τὰ ἐλάσσω, πάντων νοῦς κρατεῖ (Simpl. in Phys. 156.13). The rest of B12 is quoted and discussed on pages 84-94 above in chapter 1.

the world-creating περιχώρησις starting small and growing indefinitely larger,<sup>15</sup> creating multiplicity from an original material unity<sup>16</sup> at a rate of speed that varies over time;<sup>17</sup> and (iii) humans distinguish themselves by their application of intelligence in gathering nourishment.<sup>18</sup>

### The Origin and Development of Ethics according to Democritus (3.2)

Democritus' predecessors in the Critical Tradition constructed διάκοσμοι around narratives of origin and development (sketched briefly in chapter 1): we have seen that Democritus followed suit (with the cosmological narrative outlined in chapter 2). As extant in the historical record, certain Critical narratives of origin and development talk historically about the origin and development of humanity, treating human beings (i) as animals whose circumstances (ii) change over time and (iii) require adaptive approaches to nourishment if mankind is to survive and/or thrive. Here too, if we judge from the fragments extant, Democritus followed suit, starting with a core narrative essentially

15 καὶ πρῶτον ἀπὸ τοῦ μικροῦ ἤρξατο περιχωρεῖν, ἐπὶ δὲ πλέον περιχωρεῖ, καὶ περιχώρησει ἐπὶ πλέον (DK59B4a = Simpl. in Phys. 34.18-20, 27).

16 πρὶν δὲ ἀποκριθῆναι [ταῦτα] πάντων ὁμοῦ ἐόντων οὐδὲ χροίη ἔνδηλος ἦν οὐδεμία· ἀπεκώλυε γὰρ ἡ σύμμιξις πάντων χρημάτων (DK59B4b = Simpl. in Phys. 34.20-27).

17 See DK59B9: οὕτω τούτων περιχωρούντων τε καὶ ἀποκρινομένων ὑπὸ βίης τε καὶ ταχυτήτος (βίην δὲ ἢ ταχυτῆς ποιεῖ), ἢ δὲ ταχυτῆς αὐτῶν οὐδενὶ ἔοικε χρήματι τὴν ταχυτήτα τῶν νῦν ἐόντων χρημάτων ἐν ἀνθρώποις, ἀλλὰ πάντως πολλαπλασίως ταχύ ἐστι (Simpl. in Phys. 35.15). For confirmation of the temporal evolution of Anaxagoras' universe, remember that the doxography credits him with a theory of animal (and human) evolution similar to that of Anaximander; see DK59A1 (Diog. 2.9) and A42 (Hippol. Refut. 1.8.1), quoted and discussed on page 88 in chapter 1.

18 See DK59B4a and B21b (= A102, Plut. De fort. 3.98f), quoted on pages 87 and 90 in chapter 1, and discussed in the same chapter on pages 90-100. Lacking explicit confirmation that Anaxagoras created a politogony, we are left with hints: cosmic νοῦς orders infinite matter into holding patterns that develop historically in rational sequence (the περιχώρησις); human νοῦς orders finite matter into households and cities (holding patterns that might also develop historically in rational sequence). At the very least, where there is a diachronic narrative of the workings of cosmic νοῦς, nothing prohibits a diachronic narrative of human νοῦς (which the larger Anaxagorean narrative would have contained): Xenophanes' insight in DK21B18 (see note 5 above) is not out of place in the Anaxagorean διάκοσμος, which does not presume a static vision of humanity or human behavior.

identical to the one just recognized in the fragments of Anaximander, Xenophanes, Empedocles, and Anaxagoras, and developing it to fit his concept of ἀνάγκη.<sup>19</sup>

### Humans as Animals in Democritus (3.2.1)

We have already examined the Democritean story of human and animal origins (extant in the doxographical fragments quoted on page 146 above in chapter 2), a story that shows clear affinity with similar stories credited to Anaximander,<sup>20</sup> Xenophanes,<sup>21</sup> and Anaxagoras.<sup>22</sup> All of these stories locate the origins of human and animal life in the water. The more developed stories (e.g. those credited to Anaximander, Anaxagoras, and Democritus) have ancestral life-forms emerging from the water before diversifying to produce modern, ground-dwelling animal species, including humans.<sup>23</sup> If humanity derives from primitive animal life thus, as these Critical stories say, then it stands to reason that human and animal behavior should be related somehow (as parallel instances of biological derivation from a common source, at the very least). Like other Critical thinkers (e.g. Xenophanes in DK21B15),<sup>24</sup> Democritus has ideas about the behavioral

19 Where other thinkers structure their narratives around different core principles, e.g. the struggle between φιλότης and νεῖκος in Empedocles or the interaction between material and νοῦς in Anaxagoras. Anaximander tells a story about boundless material (ἄπειρον), and Xenophanes talks about everything coming from and dissolving into the earth (γῆ, γαῖα).

20 See DK12A10 ([Plut.] *Strom.* 2), A11 (Hippol. *Refut.* 1.6.6), and A30 (Aet. 5.19.4; Censor. 4.7; Plut. *Symp.* 8.8.4, p. 730e), discussed above on pages 178-188.

21 See DK21B33 (Sext. *Adv. math.* 10.314) and A42 (Aet. 2.30.8), discussed in chapter 1 on page 39.

22 See DK59A1 (Diog. 2.9) and A42 (Hippol. *Refut.* 1.8.1), discussed in chapter 1 on page 88.

23 Plato inverts this order of development in the *Timaeus* (92a-c), having the demiurge create aquatic animals from the terrestrial ancestors distinguished by their senselessness (which renders them unworthy to breath undiluted air).

24 See also DK68A112 (= fr. 77, 79-80 Luria, Aristot. *Metaph.* 3.5.1009b1-17), quoted on page 162 above in chapter 2, wherein Aristotle credits multiple philosophers (unnamed, though Democritus is quoted explicitly as one exemplar) with the idea that the perceptive experience of other animals proves the subjectivity of human perception (ἔτι δὲ καὶ πολλοῖς τῶν ἄλλων ζώων ὑγιαίνουσι τάναντία περὶ τῶν αὐτῶν φαίνεσθαι καὶ ἡμῖν). Comparing human and animal behavior is certainly not unique to Democritus or the Critical Tradition: outside that tradition, it occurs routinely in Homeric epic and Archaic lyric poetry.

likeness between humans and animals, ideas that have left their mark in the historical record. Consider the following series of quotations from Democritus:

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
κατὰ δὲ ζώων ἔστιν ὧν φόνου καὶ μὴ φόνου ὧδε ἔχει· τὰ ἀδικέοντα καὶ θέλοντα ἀδικεῖν ἀθώιος ὁ κτείνων, καὶ πρὸς εὐεστοῦν τοῦτο ἔρδειν μᾶλλον ἢ μή. ( <i>Luria</i> )	Concerning the killing or not killing of some living things it stands thus: he who kills those which do or attempt to do wrong is free of punishment, and doing this contributes more to well-being than not. ( <i>Taylor</i> )  Democritus, fr. 257 DK = fr. D121 Taylor = fr. 620 Luria  Stob. 4.2.15
κτείνειν χρὴ τὰ πημαίνοντα παρὰ δίκην πάντα περὶ παντὸς καὶ ταῦτα ὁ ποιῶν εὐθυμίας καὶ δίκης καὶ θάρσεος καὶ κτήσεως <sup>25</sup> ἐν παντὶ κόσμῳ μέζω μοῖραν μεθέξει. ( <i>DK</i> )	Si devono uccidere, costi quel che costi, tutti coloro che fanno danno contro giustizia; chi farà questo parteciperà di una sorte migliore in ogni tipo di regime, una sorte di tranquillità dell'anima, di giustizia dinanzi alla legge, di sicurezza e di [proprietà]. ( <i>Luria, Krivushina, emended</i> )  Democritus, fr. 258 DK = fr. D122 Taylor = fr. 621 Luria  Stob. 4.2.16

25 The MSS have κτάσεως, which DK emend to κτήσεως (as above) and Luria to ἐκτάσεως. The emendation of DK resonates better with other fragments in the corpus (e.g. fr. 646, 721 Luria, which attest Democritean usage of κτήσις) than Luria's ἑκτασις (which would be a *hapax legomenon* in the Democritean corpus, as far as I can tell).

<p>ὅκωσπερ περὶ κιναδέων τε καὶ ἑρπετέων γεγράφεται τῶν πολεμίων, οὕτω καὶ κατὰ ἀνθρώπων δοκεῖ μοι χρεῶν εἶναι ποιεῖν· κατὰ νόμους τοὺς πατρίους κτείνειν πολέμιον ἐν παντὶ κόσμῳ, ἐν ᾧ μὴ νόμος ἀπείργει· ἀπείργει δὲ ἱερὰ ἐκάστοισι ἐπιχώρια καὶ σπονδαὶ καὶ ὅρκοι. (<i>Luria</i>)</p>	<p>As it has been written concerning hostile beasts and reptiles, so it seems to me one should do in the case of men. According to the ancestral laws one may kill an enemy in every form of community, provided that the law does not prohibit it; prohibitions are made by the religious enactments of each state, by treaties, and by oaths. (<i>Taylor</i>)</p> <p>Democritus, fr. B259 DK = fr. D123 Taylor = fr. 622 Luria</p> <p>Stob. 4.2.17</p>
<p>κιζάλλην καὶ ληιστὴν πάντα κτείνων τις ἀθῶιος ἂν εἴη καὶ αὐτοχειρίῃ καὶ κελεύων καὶ ψήφῳ. (<i>Luria</i>)</p>	<p>Anyone who kills any highway robber or pirate, whether by his own hand or by his order or by his vote, should be free of punishment. (<i>Taylor</i>)</p> <p>Democritus, fr. B260 DK = fr. D124 Taylor = fr. 623 Luria</p> <p>Stob. 4.2.18</p>

This series is part of a larger collection of contiguous Democritean fragments preserved by Stobaeus (4.2.13-18). The fragments quoted here are all covered under the same attribution, meaning that they probably derive from the same source—either another florilegium or some lost work of Democritus.<sup>26</sup> If they are from a florilegium, then the fragments likely represent a collation of several statements Democritus delivered regarding the death penalty.<sup>27</sup> In any event, the fragments offer a consistent ethical message: *certain criminals should be killed with impunity*. Fr. 620 Luria identifies these

26 The longer quotations in Stobaeus (e.g. DK68B172, B173-175, B179, B181-182, B191, B223, B228, B234-235, B248, B252-253, B255, B257-259, B262, B264-266, B276-279) indicate that he may have had access to more than just brief quotations (such as we find in florilegia). See Gerlach (2008), 63.

27 For more discussion of Stobaeus as a source for Democritean fragments, see Gerlach (2008), 62-71.

criminals as “those which do or attempt to do wrong” (τὰ ἀδικέοντα καὶ θέλοντα ἀδικεῖν); fr. 621 Luria similarly as “coloro che fanno danno contro giustizia” (τὰ πημαίνοντα παρὰ δίκην). Both fragments refer to the criminals using neuter forms (τὰ ἀδικέοντα, τὰ πημαίνοντα), a neutrality that fr. 620 explains as including animals (κατὰ δὲ ζώων ἔστιν ὧν φόνου καὶ μὴ φόνου ὥδε ἔχει);<sup>28</sup> and both fragments state that the criminals have transgressed δίκη, making δίκη something that applies to humans and animals alike.<sup>29</sup> Fr. 622 Luria makes the moral likeness between humans and animals explicit: just as hostile animals may be killed with impunity, so human enemies may be. Reading the last fragment (623 Luria) in light of this one, it seems that Democritus found no hard, categorical distinction between a human pirate and a dangerous animal.

According to the δίκη that applies to humans and animals alike in fr. 621 Luria, both are

28 τὰ ἀδικέοντα are τὰ ζῷα ἀδικέοντα.

29 This position is prefigured by Archilochus, who has Zeus minding the δίκη of animals: ὦ Ζεῦ, πάτερ Ζεῦ, σὸν μὲν οὐρανοῦ κράτος, / σὺ δ' ἔργ' ἐπ' ἀνθρώπων ὄραϊς / λεωργὰ καὶ θεμιστά, σοὶ δὲ θηρίων / ὕβρις τε καὶ δίκη μέλει (fr. 177 West = Stob. 1.3.34). Contrast this with Hesiod, who gives animals no δίκη: τόνδε γὰρ ἀνθρώποισι νόμον διέταξε Κρονίων, / ἰχθύσι μὲν καὶ θηρσί καὶ οἰωνοῖς πετεηνοῖς / ἔσθειν ἀλλήλους, ἐπεὶ οὐ δίκη ἐστὶ μετ' αὐτοῖς (*Opera et dies* 276-278). The quote from Hesiod is especially interesting in light of the discussion of Democritus that follows, since Democritus also has humanity acquiring νόμος as something extra (and unique): the difference is that Democritus sees νόμος as addition to (and a check on) animal δίκη, while Hesiod presents animals as lacking any δίκη. In the Critical Tradition, Democritus' position presupposes a position like the one taken by Heraclitus, who makes δίκη something universal rather than simply human: τῷ μὲν θεῷ καλὰ πάντα καὶ δίκαια (fr. 91 Marcovich, quoted in full on page 51 in chapter 1). Another passage worth looking at in this context comes from Homer: ὥς οὐκ ἔστι λέουσι καὶ ἀνδράσιν ὄρκια πιστά, / οὐδὲ λύκοι τε καὶ ἄρνες ὁμόφρονα θυμὸν ἔχουσιν, / ἀλλὰ κακὰ φρονέουσι διαμπερὲς ἀλλήλοισιν (*Il.* 22.262-264). While δίκη is not explicitly mentioned, the Homeric animals' lack of ὄρκια recalls Democritus' position in fr. 622 Luria that ὄρκοι constitute a human check on the ancestral custom of killing enemies (κατὰ νόμους τοὺς πατέριους κτείνειν πολέμιον) that is congruent with animal δίκη in fr. 620-621 Luria. Looking at these passages together, we see that Homer, Archilochus, and Democritus represent animals as practicing moral behavior comparable to humans; Archilochus and Democritus think that animals can practice justice, with Democritus making them exemplars of the punitive justice that Homeric Achilles wants from Hector (and illustrates with an epic simile comparing himself to animals). Hesiod denies the existence of animal justice, declining to describe behavior like that of Achilles with the word δίκη. See page 18 above, discussing fr. 559 Luria (also quoted below on page 199).

equally guilty and should be killed without mercy (κτείνειν χρη̃ τὰ πημαίνοντα παρὰ δίκην πάντα περὶ παντὸς). But in fr. 622 Luria, humanity has interposed something between this ruthless δίκη and the criminal: ancestral laws countermand it in certain circumstances (ἀπείργει δὲ ἱερὰ ἐκάστοισι ἐπιχώρια καὶ σπονδαὶ καὶ ὅρκοι). Humanity improves upon the δίκη that it shares with animals (κτείνειν πολέμιον),<sup>30</sup> adding its own νόμος (μὴ νόμος ἀπείργει). Humans share certain behaviors with other animals (e.g. killing enemies), behaviors that they constrain with their own innovative customs (e.g. various rights of sanctuary or immunity).

Another fragment illustrating this phenomenon in Democritean ethics concerns the getting and rearing of children:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
<p>ἀνθρώποισι τῶν ἀναγκαίων δοκεῖ εἶναι παῖδας κτήσασθαι ἀπὸ φύσιος καὶ καταστάσιός τινος ἀρχαίης. δῆλον δὲ καὶ τοῖς ἄλλοις ζώιοισι πάντα γὰρ ἔκγονα κτᾶται κατὰ φύσιν ἐπωφελείης γε οὐδεμιᾶς εἵνεκα· ἀλλ' ὅταν γένηται, ταλαιπωρεῖ καὶ τρέφει ἕκαστον ὡς δύναται καὶ ὑπερδέδοικε, μέχρι σμικρὰ ἦι, καὶ ἦν τι πάθῃ, ἀνιᾶται. ἡ μὲν φύσις τοιαύτη πάντων ἐστὶν ὅσα ψυχὴν ἔχει· τῷ δὲ δὴ ἀνθρώπῳ νομίζον ἤδη πεποιήται, ὥστε καὶ ἐπαύρεσίν τινα γίγνεσθαι ἀπὸ τοῦ ἐκγόνου.</p>	<p>People think of having children as necessary because of their nature and their long-established constitution. This is clear from the other animals too; they all have young in accordance with their nature, but not for any benefit. But when they are born each one takes trouble to rear them as best it can and fears for them when they are little and grieves if anything happens to them. The nature of all living things is like that. But as far as mankind are concerned the opinion has grown up that there is some advantage to be derived from one's offspring.</p> <p>Democritus, fr. 278 DK = fr. D142 Taylor</p>

30 Note that this justice is practical (answering the real historical problem of piracy with brutal efficiency), as recognized by Procopé (1989), 312.

	= fr. 562 Luria Stob. 4.24.33
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All animals bear offspring and care for them when they are small (ἡ μὲν φύσις τοιαύτη πάντων ἐστὶν ὅσα ψυχὴν ἔχει), but humans are unique in expecting that children will prove beneficial to their parents (τῷ δὲ δὴ ἀνθρώπῳ νομίζον ἤδη πεποιήται, ὥστε καὶ ἐπαύρεσίν τινα γίγνεσθαι ἀπὸ τοῦ ἐκγόνου). That expectation persists because of a certain ancient arrangement (καταστάσιός τινος ἀρχαίης). Once again, human beings have improved animal life (getting and rearing offspring) with custom (offspring assist their parents). Here the custom is an informal opinion (νομίζον), where earlier it was more formal (e.g. σπονδαὶ καὶ ὅρκοι in fr. 622 Luria above).<sup>31</sup> At this point, we begin to wonder whether Democritus expressed any ideas about the origins of these customs. Did the atomist provide an origin-and-development narrative explaining how primitive humanity differentiated from the animals, taking ancient bestial habits (like killing enemies and begetting children) and embellishing these with the abundance of different human customs (formal and informal)<sup>32</sup> known to the ancient Greeks?<sup>33</sup>

31 On the increasingly commonplace distinction between formal and informal law or custom in Democritus' day, see Cole (1967), 113-115.

32 Archaic and Classical Greeks were very aware that different human societies have different customs: see e.g. Homer, *Il.* 4.433-438; *Od.* 9.105-115; Herodot. 3.38. This awareness appears reflected in the Critical Tradition, e.g. in Xenophanes (DK21B3, B16).

33 Our initial response should be affirmative. Reading fr. B278 DK (quoted above on page 188), Cole (1967) emphasizes the implication of historical development: "The phrase ἤδη πεποιήται indicates that there was in Democritus' view a time when the particular *nomizon* with which he is dealing did not exist" (115). Cole then compares this phrase with ἐκ τοῦ περιεῦντος ἤδη from fr. B144 DK (quoted on page 191 below): "It is only now (ἤδη = *nunc demum*), not at all periods in man's history, that a *nomizon* governing child rearing is operative; it was when a condition of superfluity obtained, and only then (*tunc demum*), that certain arts became possible" (115). Section 3.2.2 validates this insight.



### Democritean *Kulturgeschichte* (3.2.2)

While few fragments shed direct light on Democritus' ideas about human cultural evolution, those that do preserve very interesting information, confirming some of what we have already guessed above and paving the way for deeper inquiry:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
γελοῖοι δ' ἴσως ἐσμὲν ἐπὶ τῷ μανθάνειν τὰ ζῶια σεμνύνοντες, ὧν ὁ Δημόκριτος ἀποφαίνει μαθητὰς ἐν τοῖς μεγίστοις γεγονότας ἡμᾶς· ἀράχνης ἐν ὑφαντικῇ καὶ ἀκεστικῇ, χελιδόνος ἐν οἰκοδομίαι, καὶ τῶν λιγυρῶν, κύκνου καὶ ἀηδόνης, ἐν ᾧδῃ κατὰ μίμησιν.	Perhaps we are ridiculous to make a fuss about animals who can learn, when Democritus shows that in the most important things we have learned from them, spinning and mending from the spider, housebuilding from the swallow, and singing by imitation from songbirds, the swan and the nightingale.  Democritus, fr. B154 DK = fr. 187a Taylor = fr. 559 Luria  Plut. <i>De sollert. animal.</i> 20 p. 974a
ἡμιόνους δὲ λέγει μὴ τίκτειν· μὴ γὰρ ἔχειν ὁμοίας μήτρας τοῖς ἄλλοις ζώοις, ἑτερομόρφους δέ, ἥκιστα δυναμένης γονὴν δέξασθαι· μὴ γὰρ εἶναι φύσεως ποίημα τὴν ἡμίονον, ἀλλὰ ἐπινοίας ἀνθρωπίνης καὶ τόλμης ὡς ἂν εἴποις μοιχιδίου ἐπιτέχνημα τοῦτο καὶ κλέμμα. δοκεῖ δέ μοι, ἢ δ' ὅς, ὄνου ἵππον βιασαμένου κατὰ τύχην κυῆσαι, μαθητὰς δὲ ἀνθρώπους τῆς βίας ταύτης γεγεννημένους εἶτα μέντοι προελθεῖν ἐπὶ τὴν τῆς γονῆς αὐτῶν συνήθειαν.	He also says that mules do not breed, for their wombs are not like those of other animals, but of a different form, hardly capable of containing offspring. For the mule is not a product of nature, but a crafty contrivance of human ingenuity and, one might almost say, of sexual violence. It seems to me, he says, that a mare once happened to give birth after having been raped by an ass, and men, getting the idea from this violent act, went on to develop this kind of breeding.  Democritus, fr. A151 DK = fr. 145 Taylor = fr. 561 Luria  Ael. <i>N. a.</i> 12.16

<p>Δημόκριτος μὲν τοίνυν, ἀνὴρ οὐ φυσιολογώτατος μόνον τῶν ἀρχαίων, ἀλλὰ καὶ τῶν ἱστορουμένων οὐδενὸς ἦττον πολυπράγμων, μουσικὴν φησὶ νεωτέραν εἶναι καὶ τὴν αἰτίαν ἀποδίδωσι λέγων μὴ ἀποκρίναι τὰναγκαῖον, ἀλλὰ ἐκ τοῦ περιεῦντος ἤδη γενέσθαι.</p>	<p>Democritus, who was not only the most learned about nature of all the ancients but no less industrious than any other inquirer, says that music is more recent, and identifies its cause, saying that it was not singled out by necessity, but arose as a result of plenty.</p> <p>Democritus, fr. B144 DK = fr. 213 Taylor = fr. 568 Luria</p> <p>Philod. <i>De musica</i> 4.31, p. 108.29 Kemke; Herculaneum pap. 1497, col. 36.29-39</p>
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We have already observed an implicit link between human and animal morality in section 3.2.1 (where people and animals appear to share the same basic δίκη, augmented in the case of humans by additional νόμοι). Fr. 559 Luria goes further than this, positing an explicit historical connection that makes ancestral humans students (μαθηταί) of the animals in the most important arts (μαθητὰς ἐν τοῖς μεγίστοις γεγονότας ἡμᾶς). Fr. 561 Luria improves on this revelation by showing clearly how Democritus imagined humans learning from animals as students (μαθηταί again): confronted with the chance rape of a mare by an ass and its natural consequence, he says<sup>34</sup> that our ancestors learned how to breed mules (ὄνου ἵππον βιασαμένου κατὰ τύχην κυῆσαι, μαθητὰς δὲ ἀνθρώπους τῆς βίας ταύτης γεγεννημένους εἶτα μέντοι προελθεῖν ἐπὶ τὴν τῆς γονῆς αὐτῶν συνήθειαν). Finally, fr. 568 Luria indicates that Democritus used some kind of historical timetable, according to which certain cultural arts (those answering material necessity, τὰναγκαῖον) developed naturally before others (which exist as a result of abundance). Thus, fr. 559

<sup>34</sup> δοκεῖ δέ μοι, ἢ δ' ὅς: notice that Aelian makes this a direct quote.

tells us that Democritus thought important human habits (there is no reason not to think of these as νόμοι)<sup>35</sup> were learned from animals; fr. 561 gives us one mechanism through which Democritus imagined this occurring (human observation of chance occurrences in nature); and fr. 568 indicates that he had a historical narrative worked out, a *Kulturgeschichte* explaining which νόμοι developed first and why. While we lack any way of determining conclusively the precise content of this narrative that Democritus created, we can make a number of reasonable inferences by reading his fragments against other data that survive outside the early atomist corpus.

The external data of interest here are ancient narratives of human ethical evolution that (i) imagine human beings acquiring culture for themselves (especially through the accidental observation of nature) and (ii) show some historical connection to Democritus. Of the many examples of ancient *Kulturgeschichte* that survive,<sup>36</sup> the following serve our needs best: (1) Archelaus, fr. A4 DK; (2) Plato, *Protagoras* 320d-322e; (3) Plato, *Leges* 3.676a-683a; (4) Polybius, *Historiae* 6.5.1-6.10.12; (5) Diodorus Siculus, *Bibliotheca historica* 1.7-8; (6) Lucretius, *De rerum natura* 5.925-1457. Reviewing these *exempla* in chronological order allows us to see how Critical thinkers approach *Kulturgeschichte* in the time of Democritus (whose contemporaries in the tradition include Archelaus, Protagoras, and Plato),<sup>37</sup> and how later treatments near the atomist's ideological position

35 Democritus himself certainly thought of them this way. See the sources quoted on pages 133-143 above in chapter 2, summarized effectively by Diog. 9.44: ἀρχὰς εἶναι τῶν ὅλων ἀτόμους καὶ κενόν, τὰ δὲ ἄλλα πάντα νενομίσθαι (fr. 93, 382 Luria). Like taste, color, and temperature, human habit (whether formal law or informal custom) is just another convention (νόμος) defined by temporary atomic configurations (i.e. the evolving physical constitutions of certain individual people as they relate to one another and the surrounding environment over time).

36 For a thorough survey of the ancient *Kulturgeschichte* extant, see Cole (1967), 1-10.

37 See discussions (1), (2), and (3) below.

change in his wake. While it cannot tell us precisely what new material Democritus added to the debate, this exercise will permit us to estimate more intelligently, giving us a reasonable idea of Democritus' *Kulturgeschichte*—an idea whose validity can be verified against the fragments that survive from the atomist's work.

**(1) Archelaus, fr. A4 DK.** Doxographers remember Archelaus as an Ionian φυσικός contemporary with Democritus (fifth century), an associate of Anaxagoras and Socrates (DK60A1-3). As part of a typical Critical cosmogony (in which everything results from primal elements heating and cooling),<sup>38</sup> he is said to have composed an account of animal and human life that incorporated a *Kulturgeschichte*. Hippolytus' summary of this account casts light on the Critical conversation Democritus was entering when he wrote his own lost *Kulturgeschichte*:

TEXT (DK)	TRANSLATION (KRS)
περὶ δὲ ζώων φησὶν, ὅτι θερμαινομένης τῆς γῆς τὸ πρῶτον ἐν τῷ κάτω μέρει, ὅπου τὸ θερμὸν καὶ τὸ ψυχρὸν ἐμίσγετο, ἀνεφαίνετο τὰ τε ἄλλα ζῶια πολλὰ καὶ οἱ ἄνθρωποι, ἅπαντα τὴν αὐτὴν δίαιταν ἔχοντα ἐκ τῆς ἰλύος τρεφόμενα (ἦν δὲ ὀλιγοχρόνια), ὕστερον δὲ αὐτοῖς ἡ ἐξ ἀλλήλων γένεσις συνέστη. καὶ διεκρίθησαν ἄνθρωποι ἀπὸ τῶν ἄλλων καὶ ἡγεμόνας καὶ νόμους καὶ τέχνας καὶ πόλεις καὶ τὰ ἄλλα συνέστησαν. νοῦν δὲ λέγει πᾶσιν ἐμφύεσθαι ζώοις ὁμοίως.	On the subject of animals, he holds that when the earth was originally getting warm in the lower region, where the hot and the cold were mingled, many animals began to appear, including men, all with the same manner of life and all deriving their nourishment from the slime. These were short-lived; but later they began to be born from one another. Men were distinguished from animals, and established rulers, laws, crafts, cities, and so on. Mind, he says, is inborn in all animals alike; for each one of

<sup>38</sup> See DK60A4-18. The precise nature of Archelaus' cosmogony is clouded by the vagueness of our testimonia, but he is clearly supposed to have come up with a narrative similar to those examined already in chapter 1. In his narrative, the world-order results from certain primal elements (here the doxographers differ) combining and dissociating regularly as they heat and cool (temperature appears as a crucial causative force in fr. A4, A8, and A14 DK); some sources have Archelaus positing an Anaxagorean νοῦς with some kind of control as well (e.g. fr. A12 and A18 DK). For a more complete interpretation, see fr. 512-515 KRS and the accompanying discussion.

<p>χρησθαι γὰρ ἕκαστον καὶ τῶν ζώων τῷ νῶι, τὸ μὲν βραδυτέρως, τὸ δὲ ταχύτερως.</p>	<p>the animals, as well as man, makes use of Mind, though some more rapidly than others.</p> <p>Archelaus, fr. A4 DK = fr. 515 KRS</p> <p>Hippol. <i>Refut.</i> 1.9.5-6</p>
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Unlike earlier fragments of Critical *Kulturgeschichte* extant—e.g. Xenophanes (DK21B4, B18),<sup>39</sup> Empedocles (fr. 122, 123 Inwood),<sup>40</sup> and Anaxagoras (DK59B4a, B21b)<sup>41</sup>—this one provides an historical narrative of human cultural development that is both explicit and intact (though only in summary form). Following the line of thought represented by Xenophanes, Archelaus explains human cultural progress by human activity rather than appeal to divine intervention: ἄνθρωποι ... καὶ ἡγεμόνας καὶ νόμους καὶ τέχνας καὶ πόλεις καὶ τὰ ἄλλα συνέστησαν. Like Anaxagoras, he makes mind a universal attribute: humans differ from other animals not in possessing it, but in *how* they possess it (χρησθαι γὰρ ἕκαστον καὶ τῶν ζώων τῷ νῶι, τὸ μὲν βραδυτέρως, τὸ δὲ ταχύτερως). In both of these choices—eschewing any appeal to divine intervention<sup>42</sup> and construing man as another animal<sup>43</sup>—Archelaus thinks much like his contemporary Democritus.<sup>44</sup> Thus,

<sup>39</sup> See page 42 above in chapter 1.

<sup>40</sup> See page 82 above in chapter 1.

<sup>41</sup> See pages 87 and 90 above in chapter 1.

<sup>42</sup> For Democritus' reluctance to ascribe human ethical innovation to gods, see fr. 593 Luria: ὑγιείην εὐχῆσι παρὰ θεῶν αἰτέονται ἄνθρωποι, τὴν δὲ ταύτης δύναμιν ἐν ἑαυτοῖς ἔχοντες οὐκ ἴσασιν· ἀκρασίη δὲ τάναντία πρήσσοντες αὐτοὶ προδότες τῆς ὑγείης τῆσιν ἐπιθυμίῃσιν γίνονται (Stob. 3.18.30). See also fr. 580 Luria: τῶν λογίων ἀνθρώπων ὀλίγοι ἀνατείναντες τὰς χεῖρας ἐνταῦθα, ὃν νῦν ἡέρα καλέομεν οἱ Ἕλληνες· «πάντα, <εἶπαν>, Ζεὺς μυθέεται καὶ πάνθ' οὗτος οἶδε καὶ διδοῖ καὶ ἀφαιρέεται καὶ βασιλεὺς οὗτος τῶν πάντων» (Clem. *Protr.* 68, *Strom.* 5.103; Euseb. *Praep. Evang.* 13.13.27).

<sup>43</sup> See section 3.2.1 above.

<sup>44</sup> Xenophanes anticipates Democritus in playing down human connections with divinity (DK21B14, B16, B18, B23) and embracing our likeness to beasts (DK21B15). This does not make the atomist a

what remains of his world-ordering account at once confirms that *Kulturgeschichte* was part of the Critical cosmogonic narrative in Democritus' day, and provides an instance of the genre that agrees substantially with what we know of the atomist (who also derives men and other animals from slime and then has men develop their own unique culture sometime later).<sup>45</sup> Archelaus shows us that in composing his atomist *Kulturgeschichte* (wherein humans share physical ancestry with other animals and learn culture from interaction with them), Democritus was not doing anything extremely or suspiciously unusual: the generic outlines of his project appear entirely congruent with contemporary practice in the Critical Tradition—contemporary practice that seems to descend naturally from earlier (as far as we can tell: Xenophanes and Archelaus might appear less similar to one another and/or to Democritus if we knew more of their work, though it is hard to imagine any divergence between them that would invalidate the basic resemblance recognized here).

**(2) Plato, *Protagoras* 320d-322e.** The Athenian philosopher Plato is another contemporary of Democritus who shares in (or at least interacts extensively with) the Critical Tradition: the argument offered by the titular character in the *Timaeus* is clearly a Critical διάκοσμος (whatever the author's intent in proposing it).<sup>46</sup> In the *Protagoras*, Plato puts a *Kulturgeschichte* in the mouth of Protagoras, an Abderite from the generation immediately preceding Democritus (who would certainly have been at least somewhat

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direct or conscious heir of the philosopher-poet.

45 For the origin of animal life in mud, see page 146 above in chapter 2. The beginning of this section (3.2.2) cites what remains of his ideas on the origins of human culture.

46 Like the Critical thinkers discussed in chapter 1.3 above, Plato's *Timaeus* provides a cosmogony that embraces zoogony (91a-92c), anthropogony (69c-92c), and some reflection on human ethics (passim). For an interpretation of the *Timaeus* that coheres well with my approach, see Campbell (2000).

familiar with the work of a fellow townsman).<sup>47</sup> While Plato's impression of Protagoras' understanding of human prehistory is too long to quote in full here, we can summarize it and extract the text most important for the task at hand.

Readers familiar with the Platonic dialogue will remember that Protagoras' *Kulturgeschichte* is offered as part of a larger monologue: it is the μῦθος that the sophist offers as a prelude to his λόγος explaining that justice (δικαιοσύνη, πολιτική ἀρετή) is teachable (323a-328d). The story begins as the gods mix fire and earth underground to form animals: they then assign Prometheus and Epimetheus to distribute capabilities (δυνάμεις) among the various different species (including humans). After begging the distribution for himself, Epimetheus forgets to give humanity anything, making all useful physical qualities (strength, speed, claws and teeth, small or large size, thick hair, tough skins, hooves, reproductive prowess) over to other animals and leaving the first people naked and helpless. Prometheus corrects this fatal mistake by stealing technical skill (ἔντεχνος σοφία) from Hephaestus and Athena along with fire. Equipped with fire and the ability to make shrewd use of it, mankind survives and begins to create culture:

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47 Doxographical tradition connects them as master and pupil, inverting the chronological relationship (see fr. lxix-lxxiii, lxxxi-lxxxii Luria). While it is not inconceivable that they overlapped chronologically and even shared one another's company (Eusebius calls Protagoras the ἑταῖρος of Democritus in *Praep. Evang.* 14.3.7 = fr. lxxii Luria), this appears unlikely since the work of Ferguson (1967). At the moment, consensus is that Democritus was at least aware of the earlier Protagoras (see e.g. *SEP* s.v. "The Sophists"), whom he is supposed to have joined Plato in contradicting: καθὼς ὁ τε Δημόκριτος καὶ ὁ Πλάτων ἀντιλέγοντες τῷ Πρωταγόρῃ ἐδίδασκον (Sext. *Adv. Math* 7.389, p. 275b = fr. lxxiii Luria; see also Plut. *Adv. Colot.* 1108f, discussed above on page 3 in the Introduction). I see no reason to dispute this consensus, and accordingly I assume that the historical Protagoras represents positions at once prior to Democritus and familiar to him.

TEXT ( <i>Denyer</i> )	TRANSLATION ( <i>Taylor [1991]</i> )
<p>ἐπειδὴ δὲ ὁ ἄνθρωπος θείας μετέσχε μοίρας, πρῶτον μὲν διὰ τὴν τοῦ θεοῦ συγγένειαν ζώων μόνον θεοὺς ἐνόμισεν, καὶ ἐπεχείρει βωμούς τε ἰδρύεσθαι καὶ ἀγάλματα θεῶν· ἔπειτα φωνὴν καὶ ὀνόματα ταχὺ διηθρώσατο τῇ τέχνῃ, καὶ οἰκῆσεις καὶ ἐσθῆτας καὶ ὑποδέσεις καὶ στρωμνάς καὶ τὰς ἐκ γῆς τροφὰς ἡύρετο. οὕτω δὲ παρεσκευασμένοι κατ' ἀρχὰς ἄνθρωποι ὠίκουν σποράδην, πόλεις δὲ οὐκ ἦσαν· ἀπώλλυντο οὖν ὑπὸ τῶν θηρίων διὰ τὸ πανταχῇ αὐτῶν ἀσθενέστεροι εἶναι, καὶ ἡ δημιουργικὴ τέχνη αὐτοῖς πρὸς μὲν τροφὴν ἱκανὴ βοηθὸς ἦν, πρὸς δὲ τὸν τῶν θηρίων πόλεμον ἐνδεής—πολιτικὴν γὰρ τέχνην οὐπω εἶχον, ἥς μέρος πολεμική—ἐζήτουν δὴ ἀθροίζεσθαι καὶ σώζεσθαι κτίζοντες πόλεις· ὅτ' οὖν ἀθροισθεῖεν, ἠδίκουν ἀλλήλους ἅτε οὐκ ἔχοντες τὴν πολιτικὴν τέχνην, ὥστε πάλιν σκεδαννύμενοι διεφθείροντο.</p>	<p>Since man shared a divine gift, first of all through his kinship with the gods he was the only creature to worship them, and he began to erect altars and images of the gods. Then he soon developed the use of articulate speech and of words, and discovered how to make houses and clothes and shoes and bedding and how to till the soil. Thus equipped, men lived at the beginning in scattered units, and there were no cities; so they began to be destroyed by wild beasts, since they were altogether weaker. Their practical art was sufficient to provide food, but insufficient for fighting against the beasts—for they did not yet possess the art of running a city, of which the art of warfare is part—and so they sought to come together and save themselves by founding cities. Now when they came together, they treated each other with injustice, not possessing the art of running a city, so they scattered and began to be destroyed once again.</p> <p>Plato. <i>Protag.</i> 322a-c</p>

In the end, Zeus rescues mankind by having Hermes give them respect (αἰδώς) and justice (δίκη), the essential qualities they need to found successful cities (322c). The king of the gods tells his messenger to distribute these qualities generally to all people, rather than selectively to individuals. If a citizen is unable to partake of these essential virtues for some reason, the punishment is execution.<sup>48</sup> In the speech (λόγος) that follows this story, Protagoras explains how the laws and customs of a city nurture and improve the

48 καὶ νόμον γε θεὸς παρ' ἐμοῦ τὸν μὴ δυνάμενον αἰδοῦς καὶ δίκης μετέχειν κτείνειν ὡς νόσον πόλεως (*Protag.* 322d). Notice the similarity between this harsh assessment and the judgment of Democritus: κτείνειν χρὴ τὰ πημαίνοντα παρὰ δίκην πάντα περὶ παντὸς (Stob. 4.2.16 = fr. 621 Luria).



individual endowment of respect and justice in each one of its citizens, offering an explanation of human ethics that resonates significantly with the Democritean ethical corpus.<sup>49</sup>

There are several interesting things to notice here. In the first place, Protagoras' μῦθος comes out of the Critical tradition. In the beginning, all we have are primal elements: fire, earth, and traditional Olympians taking the place of other thinkers' ordering principle(s), e.g. Democritean ἀνάγκη. Here as elsewhere (see the previous chapters), these elements combine to create animal life (zoogony) that includes the human experience (anthropogony culminating in a politogony that in this case remains fully intact in the record). If this story does not originate with the historical Protagoras, it certainly could have. It has all the hallmarks of a genuine Critical διάκοσμος.

The second thing to notice is the world that Protagoras' primitive men inhabit. It is a savage world in which animals fight among themselves for survival. Having only fire and mental acuity (which they put to good use inventing religion, language, shelter, clothing, and basic agriculture),<sup>50</sup> ancestral humanity is ill-equipped for this war (πρὸς δὲ τὸν τῶν θηρίων πόλεμον ἐνδεής). Gathering together for protection, they found the first cities, which save them from the other animals but not from one another (ἡδίκουν

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49 Ferguson (1967) found the similarity so striking that he concluded Plato was putting Democritean ideas in the mouth of Protagoras. I am not prepared to go this far, preferring to say that the two Abderites show a remarkably similar approach to ethics and the world-order generally: Democritus is less of a relativist than Protagoras, but he is still ultimately a relativist, since objective truth remains hidden in the abyss (ἐτεῆρι δὲ οὐδὲν ἴδμεν· ἐν βυθῶι γὰρ ἡ ἀλήθεια: Diog. 9.72 = fr. 51 Luria) and men are separated from reality (γινώσκειν τε χρή, φησίν, ἄνθρωπον τῶιδε τῶι κανόνι, ὅτι ἐτεῆς ἀπὴλλακται: Sext. *Adv. math.* 7.137 = fr. 48 Luria). The similarities between Protagorean and Democritean ethics will be brought up later as they become relevant.

50 Notice that none of these skills is itself the gift of a god: Protagoras' early men, like Xenophanes' (in DK21B18, quoted in note 5 above), must discover things for themselves.

ἀλλήλους ἅτε οὐκ ἔχοντες τὴν πολιτικὴν τέχνην). Civic virtues are acquired late as an amendment to the savage nature that man shares with other animals (similar to the situation that we observed already on pages 185-189, where we interpreted Democritus, fr. 620-623 and 562 Luria).<sup>51</sup>

The most important difference between Archelaus' *Kulturgeschichte* and that of Protagoras, as extant, is that the latter puts explicit selective pressure on early mankind. Archelaus' primitive humans develop culture for reasons that remain unexamined, though there is some hint that mankind is different from other animals and that that difference manifests itself in the human mind. While the rudimentary development of human culture remains similarly opaque in the myth of Protagoras, with the development of basic crafts following the gift of Prometheus in no particular order, its culmination in the creation of cities involves deliberate struggle—first the war with other animals, then civil strife between men (a new form of war: this myth may owe something to Heraclitus).<sup>52</sup> Whether the myth goes back to Protagoras or Plato, it shows that Democritus was not doing something entirely unexpected or unusual when he created a *Kulturgeschichte* driven by human interaction with necessity (the selective pressure in early atomism).<sup>53</sup>

Critical philosophers close to him were thinking along similar lines, looking for

51 In the speech that follows our story, Plato's Protagoras strengthens the likeness between himself and Democritus when he recognizes a kind of savage justice in animals, who retaliate against those who wrong them (with no thought of teaching anyone anything or influencing future behavior): οὐδείς γὰρ κολάζει τοὺς ἀδικοῦντας πρὸς τούτῳ τὸν νοῦν ἔχων καὶ τούτου ἕνεκα, ὅτι ἡδίκησεν, ὅστις μὴ ὥσπερ θηρίον ἀλογίστως τιμωρεῖται (324a-b). This looks much like the δίκη that humans and animals share in Democritus, fr. 620-623 Luria.

52 See Heraclitus, fr. 28-29 Marcovich, quoted and discussed on page 50 in chapter 1.

53 See fr. 568 Luria, quoted above on pages 173 and 191, in which music develops later than arts that serve needs more immediate. A central role for necessity in Democritean *Kulturgeschichte* is not unexpected, since necessity is responsible for everything in early atomism: see chapter 2, especially 2.2.

something more than just divine intervention or incomprehensible accident to drive their narrative accounts of human cultural development.

**(3) Plato, *Leges* 3.676a-683a.** Plato puts a more complex *Kulturgeschichte* in the mouth of the Athenian stranger in this passage. Like the Platonic Protagoras, the Athenian stranger offers his narrative as background to a practical discussion of ethics: Protagoras believes that justice is teachable, and the Athenian stranger believes that an ideal city can be created (if lawgivers conceive human nature correctly and use this conception to come up with laws).<sup>54</sup> Once again, the complete narrative is too long to be reproduced, obliging us to resort to summary and selective quotation.

The Athenian stranger's story begins with the familiar observation that infinite time brings changes<sup>55</sup>—among these, the foundation of human cities and their maturation in virtue and vice. He then lays out an ancient theory of catastrophism in which human beings repeatedly create civilization (i.e. cities and the complex cultural skills needed to sustain these), suffer an incredible calamity that destroys everything they have made, and then rebuild it from scratch (with no memory of what it was).<sup>56</sup> According to this theory,

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54 Like the ethical outlook taken by Plato's Protagoras (see note 49 above), the Athenian stranger's practical ethical platform also resonates significantly with the Democritean ethical corpus (as extant). Points of coincidence between his ethics and early atomism will be noted as they become relevant.

55 This is the first point the stranger makes: ΑΘ. πολιτείας δὲ ἀρχὴν τίνα ποτὲ φῶμεν γεγονέναι; μὲν οὐκ ἐνθένδε τις ἂν αὐτὴν ῥαίστα τε καὶ κάλλιστα κατίδοι; ΚΛ. Πόθεν; ... ΑΘ. Οἶμαι μὲν ἀπὸ χρόνου μήκους τε καὶ ἀπειρίας καὶ τῶν μεταβολῶν ἐν τῷ τοιούτῳ (*Leg.* 676a-b). Later, he restates it thus: ΑΘ. Οὐκοῦν προϊόντος μὲν τοῦ χρόνου, πληθύνοντος δ' ἡμῶν τοῦ γένους, εἰς πάντα τὰ νῦν καθεστηκότα προελήλυθεν πάντα; ΚΛ. Ὅρθότατα (*Leg.* 678b). Compare Porphyry's summary of Pythagoras on page 106 above in chapter 1. This kind of thinking is characteristic of the Critical tradition.

56 ΑΘ. Οὐκοῦν οὕτω δὴ λέγωμεν ἔχειν τότε, ὅτ' ἐγένετο ἡ φθορά, τὰ περὶ τοὺς ἀνθρώπους πράγματα, μυρίαν μὲν τινα φοβερὰν ἐρημίαν, γῆς δ' ἀφθόνου πλήθος πάμπολυ, ζώων δὲ τῶν ἄλλων ἐρρόντων, βουκόλι' ἄττα, καὶ εἴ τί που αἰγῶν περιλειφθὲν ἐτύγχανεν γένος, σπάνια καὶ ταῦτα νέμουσιν εἶναι ζῆν τότε κατ' ἀρχάς; ΚΛ. Τί μὴν; ΑΘ. Πόλεως δὲ καὶ πολιτείας πέρι καὶ νομοθεσίας, ὧν νῦν γέγονεν ἡμῖν σύμπαντα, πόλεις τε καὶ πολιτεῖαι καὶ τέχναι καὶ νόμοι, καὶ πολλὴ μὲν πονηρία, πολλὴ δὲ ἀρετή; ΚΛ. Οὐδαμῶς (*Leg.* 678a). This cyclic understanding of history recalls the διάκοσμος of Heraclitus

every kind of social arrangement that anyone can think of has already been tried many times in the past, meaning that human ethics are predictable (i.e. they evolve naturally in response to recurring stimuli).<sup>57</sup> There follows a lengthy discussion defining the cycle of civilization more precisely: primitive men survive world-ending calamities (the stranger posits a deluge) in isolated mountainous areas (*Leg.* 677b), from which they emerge to found small settlements in the foothills (*Leg.* 681a), which become the eventual parents of cities in the plains (*Leg.* 682a-c)—cities whose subsequent destruction restarts the cycle. The mountain folk lack technology and society (all tools and technical knowledge having perished as a result of the latest catastrophe); the city folk are technically adept and socially complex; and the hill folk occupy a middle ground, figuratively as well as literally. In telling this story, the Athenian stranger stresses an early version of the myth of the noble savage, positing that the less technically and socially developed people are inherently morally superior to their more civilized descendants (whose arts include not only helpful trades but also tricks for harming other city-dwellers, e.g. the art of lying, which is supposedly unknown to naïve primitives).<sup>58</sup>

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(chapter 1.3.3) or (especially) Empedocles (1.3.5), in which the κόσμος evolves in a regular cycle (which in the case of Empedocles include regular fluctuations in the way people treat each other, i.e. regular ethical revolutions to match the physical revolution of the four elements).

57 ΑΘ. Μῶν οὖν οὐ μυρίαί μὲν ἐπὶ μυρίαὶς ἡμῖν γεγονάσι πόλεις ἐν τούτῳ τῷ χρόνῳ, κατὰ τὸν αὐτὸν δὲ τοῦ πλήθους λόγον οὐκ ἐλάττους ἐφθαρμέναι; πεπολιτευμένοι δ' αὖ πάσας πολιτείας πολλάκις ἐκασταχοῦ; ... ΚΛ. Ἀναγκαῖον. ΑΘ. Ταύτης δὴ πέρι λάβωμεν, εἰ δυναίμεθα, τῆς μεταβολῆς τὴν αἰτίαν· τάχα γὰρ ἂν ἴσως δείξειεν ἡμῖν τὴν πρώτην τῶν πολιτειῶν γένεσιν καὶ μετάβασιν (*Leg.* 676b-c). Notice the focus on finding the αἰτία for human ethical behavior (like the creation and implementation of a πολιτεία). Αἰτιολογία is important for the Athenian stranger as for Democritus (see page 121 above in chapter 2, especially note 23).

58 See *Leg.* 677b, 679a-e.

Like the stories already examined, the Athenian stranger's *Kulturgeschichte* presumes significant human involvement in the invention of culture (which primitive people repeatedly discover and develop for themselves).<sup>59</sup> Like the myth of Protagoras, it introduces αἰτίαι—impersonal motivating forces that guide human invention the way πόλεμος and ἀδικία do in Protagoras' myth. The initial αἰτία is a disaster (φθορά, νόσος, κατακλυσμός; *Leg.* 677a; φθορά: *Leg.* 682c) that destroys urban civilization, sparing only a few human survivors, mountain-dwellers whose existence is defined by solitude (ἐρημία: *Leg.* 678e). While these survivors and their immediate descendants retain resources and technical abilities sufficient to live, they desire human company, which the recent disaster has made scarce. The Athenian stranger is careful to make satisfying this desire a matter of preference rather than strict necessity<sup>60</sup> (as in Protagoras' myth, where the πόλεμος among the animals demands that men create cities or perish):

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59 Discussing how catastrophe destroys all vestiges of civilized life at the beginning of a new cultural cycle, the stranger sounds much like Xenophanes (DK21B18, quoted above in note 5): ΑΘ. Οὐκοῦν ὄργανά τε πάντα ἀπόλλυσθαι, καὶ εἴ τι τέχνης ἦν ἐχόμενον σπουδαίως ἠρύρῃμενον ἢ πολιτικῆς ἢ καὶ σοφίας τινὸς ἐτέρας, πάντα ἔρρειν ταῦτα ἐν τῷ τότε χρόνῳ φήσομεν; πῶς γὰρ ἂν, ὦ ἄριστε, εἴ γε ἔμενεν τάδε οὕτω τὸν πάντα χρόνον ὥς νῦν διακεκόσμηται, καὶ νῦν ἀνηυρίσκετό ποτε καὶ ὀτιοῦν; (*Leg.* 677c). (Notice the verb διακεκόσμηται, whose appearance in this context suggests that Democritus would not be the only Critical thinker to think that a discussion of the διάκοσμος includes ethics.) Unlike Plato's Protagoras, the Athenian stranger does not make gods directly responsible for human ethics. The stranger's primitives discover civic virtues for themselves, the same way Protagoras' primitives discover how to use the gifts of Prometheus.

60 This insistence may indicate that the Athenian stranger is arguing against alternative *Kulturgeschichte* in which mankind is much needier, i.e. *Kulturgeschichte* more like the myth of Protagoras. This is argued well by Cole (1967), 102-104. Note that the Athenian stranger's hill-dwellers do build walls eventually, as a protection against wild animals even (*Leg.* 680e-681a, quoted below on page 206), but this is not stressed as a matter of survival (which in the Athenian stranger's story depends more on human fear and forgetfulness than our ability to out-fight other animals).

TEXT ( <i>Burnet</i> )	TRANSLATION ( <i>A. Taylor in Hamilton [1961]</i> )
<p>ΑΘ. Πρῶτον μὲν ἡγάπων καὶ ἐφιλοφρονοῦντο ἀλλήλους δι' ἐρημίαν, ἔπειτα οὐ περιμάχητος ἦν αὐτοῖς ἡ τροφή. νομῆς γὰρ οὐκ ἦν σπάνις, εἰ μὴ τισιν κατ' ἀρχὰς ἴσως, ἥι δὴ τὸ πλεῖστον διέζων ἐν τῷ τότε χρόνῳ· γάλακτος γὰρ καὶ κρεῶν οὐδαμῶς ἐνδεεῖς ἦσαν, ἔτι δὲ θηρεύοντες οὐ φαύλην οὐδ' ὀλίγην τροφήν παρείχοντο. καὶ μὴν ἀμπεχόνης γε καὶ στρωμνῆς καὶ οἰκίσεων καὶ σκευῶν ἐμπύρων τε καὶ ἀπύρων ἠυπόρουν· αἱ πλαστικαὶ γὰρ καὶ ὅσαι πλεκτικαὶ τῶν τεχνῶν οὐδὲ ἐν προσδέονται σιδήρου, ταῦτα δὲ πάντα τούτῳ τῷ τέχνῳ θεὸς ἔδωκε πορίζειν τοῖς ἀνθρώποις, ἵν' ὅποτε εἰς τὴν τοιαύτην ἀπορίαν ἔλθοιεν, ἔχοι βλάστην καὶ ἐπίδοσιν τὸ τῶν ἀνθρώπων γένος.</p>	<p>ATHENIAN: For one thing, men's loneliness made them sociable and friendly; for another, there could be no quarreling over the means of subsistence. Except perhaps in some instances at the very first, they were not stinted for flocks and herds, the principle support of life in that age; in fact, there was no shortage of milk or meat, and besides, they could supply themselves with plenty of excellent viands by hunting. Again, they were quite well off for clothes, bedding, shelter, or vessels, culinary and other. Iron, as you know, is wholly superfluous for the arts of the potter or the weaver, and these two crafts have, by divine appointment, been empowered to supply all our wants, that our species may still be enabled to germinate and increase when it falls into such straits.</p> <p>Plato. <i>Leg.</i> 678e-679b</p>

With permanent access to pottery and weaving (gifts of the gods, like Protagorean αἰδώς and δίκη), mankind never really risks extinction (a significant difference between the story of the Athenian stranger and Protagoras' myth). Coming together to relieve the tedium of their solitude, primitive men nevertheless retain a dread (φόβος) of the plain (*Leg.* 678c) and the sea (*Leg.* 682b), the site of their ancestors' ruin, until forgetfulness (λήθη; *Leg.* 682b) lets them found a city and prepare the cycle for another repetition. The entire story can be summarized as an interaction between external, environmental αἰτίαι (the initial disaster, solitude) and internal, human αἰτίαι (knowledge of the two essential τέχναι, desire for company, fear, forgetfulness). Even more than Protagoras' myth, this

story relies on impersonal αἰτίαι, with the gods' only explicit contribution being to make pottery and weaving sufficient to satisfy all essential human needs.<sup>61</sup>

On the way down from the mountains to the plain, the site for their doomed city, the Athenian stranger's primitives develop increasingly sophisticated νόμοι to cope with their evolving community (which grows from a small, isolated clan into a large πόλις connected to a thriving trade network). The mountain-folk at the very beginning of the cycle live with informal family tradition rather than formal law, and they are explicitly likened to animals (among other things<sup>62</sup>):

TEXT ( <i>Burnet</i> )	TRANSLATION ( <i>A. Taylor in Hamilton [1961]</i> )
ΑΘ. ἼΑρ' οὖν ἐκεῖνοι μὲν οὐτ' ἐδέοντο νομοθετῶν οὔτε πω ἐφίλει κατὰ τούτους τοὺς χρόνους γίγνεσθαι τὸ τοιοῦτον; οὐδὲ γὰρ γράμματα ἔστι πω τοῖς ἐν τούτῳ τῷ μέρει τῆς περιόδου γεγονόσιν, ἀλλ' ἔθεσι καὶ τοῖς λεγομένοις πατρίοις νόμοις ἐπόμενοι ζῶσιν.	ATHENIAN: May we not perhaps say, then, that in that age men were in no need of a lawgiver, and that such a thing as a law was as yet unusual? In fact, those whose lives fall in that part of the cycle do not as yet so much as possess an alphabet, but regulate their lives by custom and what is called <i>traditionary</i> law [sic].  Plato. <i>Leg.</i> 680a

61 If we conceive the gods as engineering the whole situation, they are still much less hands-on than the Protagorean gods (in the myth as told by Plato). They set the κόσμος up and then let it cycle naturally, refraining from tampering with the narrative (unlike Prometheus and Zeus in the Protagorean myth).

62 The Athenian stranger also compares them with the Homeric Cyclopes (*Leg.* 680b, citing *Od.* 9.112-115 thus: τοῖσιν δ' οὐτ' ἀγοραὶ βουλευφόροι οὔτε θέμιστες, / ἀλλ' οἳ γ' ὑψηλῶν ὀρέων ναίουσι κάρηνα / ἐν σπέσσι γλαφυροῖσι, θεμιστεύει δὲ ἕκαστος / παίδων ἢ δ' ἀλόχων, οὐδ' ἀλλήλων ἀλέγουσιν [ed. Burnet]). According to the Athenian stranger, the Cyclopes represent a poetic reflection of recurring reality in the history of mankind (cf. *Leg.* 682a).

<p>ΑΘ. Δοκοῦσί μοι πάντες τὴν ἐν τούτῳ τῷ χρόνῳ πολιτείαν δυναστείαν καλεῖν, ἣ καὶ νῦν ἔτι πολλαχοῦ καὶ ἐν Ἑλλήσι καὶ κατὰ βαρβάρους ἐστίν ... μῶν οὖν οὐκ ἐκ τούτων τῶν κατὰ μίαν οἴκησιν καὶ κατὰ γένος διεσπαρμένων ὑπὸ ἀπορίας τῆς ἐν ταῖς φθοραῖς, ἐν αἷς τὸ πρεσβύτατον ἄρχει διὰ τὸ τὴν ἀρχὴν αὐτοῖς ἐκ πατρὸς καὶ μητρὸς γεγονέναι, οἷς ἐπόμενοι καθάπερ ὄρνιθες ἀγέλην μίαν ποιήσουσιν, πατρονομούμενοι καὶ βασιλείαν πασῶν δικαιοτάτην βασιλευόμενοι;</p>	<p>ATHENIAN: The form of polity in that age was, I believe, what is universally called <i>dynasty</i>, a form still to be found in many places among Greeks, as well as among non-Greeks ... That is, they [instances of this form of polity] are found among such men as we are speaking of, who have been dispersed in single homesteads and families as a result of the distress caused by these disasters? In such societies do we not find that the oldest members rule, because their authority has come down to them from father or mother? The rest follow them, and form one flock, like so many birds, and are thus under patriarchal control, the most justifiable of all types of royalty.</p> <p>Plato. <i>Leg.</i> 680b-e</p>
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Gathering together naturally like a flock of birds (think of Democritus, fr. 316 Luria),<sup>63</sup> the most primitive men live with uncoded family traditions (remember the δίκη that humans and animals share in Democritus, fr. 620-623 Luria)<sup>64</sup> that make the eldest living member the ultimate authority. From the perspective of the Athenian stranger, which exalts the primitive ethic at the expense of the more civilized, this arrangement is the most just one (βασιλεία δικαιοτάτη).

As the primitive community grows larger, absorbing and incorporating multiple family groups, its customs change:

<sup>63</sup> «καὶ γὰρ ζῶια, φησὶν, ὁμογενέσι ζώοις συναγελάζεται ὡς περιστερὰι περιστέραῖς καὶ γέραναι γεράνοις καὶ ἐπὶ τῶν ἄλλων ἀλόγων ὡσαύτως» (Sext. *Adv. math.* 7.116). The entire fragment is quoted above in chapter 2, on page 127.

<sup>64</sup> These fragments are quoted and discussed above in section 3.2.1.



TEXT ( <i>Burnet</i> )	TRANSLATION ( <i>A. Taylor in Hamilton [1961]</i> )
<p>ΑΘ. Μετὰ δὲ ταῦτά γε εἰς τὸ κοινὸν μείζους ποιοῦντες πόλεις πλείους συνέρχονται, καὶ ἐπὶ γεωργίας τὰς ἐν ταῖς ὑπωρείαις τρέπονται πρώτας, περιβόλους τε αἵμασι-  ώδεις τινὰς τειχῶν ἐρύματα τῶν θηρίων ἔνεκα ποιοῦνται, μίαν οἰκίαν αὖ κοινήν καὶ μεγάλην ἀποτελοῦντες.</p> <p>ΚΛ. Τὸ γοῦν εἰκὸς ταῦθ' οὕτως γίγνεσθαι.</p> <p>ΑΘ. Τί δέ; τόδε ἄρα οὐκ εἰκός;</p> <p>ΚΛ. Τὸ ποῖον;</p> <p>ΑΘ. Τῶν οἰκήσεων τούτων μειζόνων ἀυξανομένων ἐκ τῶν ἐλαττόνων καὶ πρώτων, ἐκάστην τῶν σμικρῶν παρεῖναι κατὰ γένος ἔχουσιν τὸν τε πρεσβύτατον ἄρχοντα καὶ αὐτῆς ἔθνη ἅττα ἴδια διὰ τὸ χωρὶς ἀλλήλων οἰκεῖν, ἕτερα ἀφ' ἐτέρων ὄντων τῶν γεννητόρων τε καὶ θρεψάντων, ἃ εἰθίσθησαν περὶ θεοῦ τε καὶ ἑαυτοῦς, κοσμιωτέρων μὲν κοσμιώτερα καὶ ἀνδρικών ἀνδρικώτερα, καὶ κατὰ τρόπον οὕτως ἐκάστους τὰς αὐτῶν ἂν αἰρέσεις εἰς τοὺς παῖδας ἀποτυπουμενοὺς καὶ παίδων παῖδας, ὃ λέγομεν, ἥκειν ἔχοντας ἰδίους νόμους εἰς τὴν μείζονα συνοικίαν.</p>	<p>ATHENIAN: The next step is to come together in larger numbers, which will increase the size of the communities, and turn to agriculture. This will be at first practiced in the skirts of the hill country; dry fences of a kind will be contrived as walls for defense against savage beasts, and a new and larger single homestead thus erected for the community.</p> <p>CLINIAS: At least that is the probable succession of events.</p> <p>ATHENIAN: Well, and is there not something else which is no less probable?</p> <p>CLINIAS: And what may that be?</p> <p>ATHENIAN: As these larger homesteads are in process of growth from the smaller and most primitive, each of the smaller groups will bring along with it its patriarchal ruler and certain private customs of its own—private, I mean, because the groups are isolated from each other, and the several groups have been trained by their different progenitors and fosterers in different habits of conduct toward gods and fellow men, in more orderly habits where the ancestors have been more orderly, in more valiant where they have been valiant. Thus each group comes accordingly, as I say, into the larger settlement with special laws of its own, and prepared to imprint its own preferences upon its children, and their children after them.</p> <p>Plato. <i>Leg.</i> 680e-681b</p>

The larger communities come down from the mountains, where their ancestors kept herds and hunted (see page 203 above), to the hills, where they take up farming. By this time they comprise multiple families, each with its own dynast and ethical traditions. (Notice the language used to describe how these dynasts hand down traditions in their respective families. Literally, they leave an impression on their children and grandchildren: οὕτως ἐκάστους τὰς αὐτῶν ἂν αἰρέσεις εἰς τοὺς παῖδας ἀποτυπουμένους καὶ παίδων παῖδας. This reminds us of the Democritean theory of perception and thought, in which every sensation and thought are the result of a soul receiving and transmitting substantial, material impressions from its environment.<sup>65</sup>)

The hillside farmers choose legislators to collate the various dynastic traditions extant in their growing community, create the first formal legal code(s), and pave the way for the eventual incorporation of a proper πόλις—a society that follows leaders with more explicit authority than nature's dynasts and exhibits every form and experience that is part of human life (*Leg.* 681c-682d). In choosing one tradition over another as law for this evolving community, legislators consult their own preferences, surveying the entire field of custom (τὰ πάντων νόμιμα) and recommending to rulers those that please them best (τά σοφισιν ἀρέσκοντα αὐτῶν μάλιστα εἰς τὸ κοινὸν τοῖς ἡγεμόσι ... φανερά δείξαντες ἐλέσθαι τε δόντες; *Leg.* 681c-d). In this way, hill folk produce small cities like Homeric Dardania, located on the slopes of Mount Ida (*Leg.* 681e), which give rise ultimately to mature city-states like Homeric Ilium, situated in the plain that remains deadly even after

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<sup>65</sup> See pages 154-177 above in chapter 2.3, as well as the ethical effect of atomic εἶδωλα in fr. 579 Luria and B166 DK (quoted on page 174 above in chapter 2.4).

it has ceased to strike men with terror (*Leg.* 682b-c). Once the sack of Ilium is invoked (*Leg.* 682d), the dialogue ceases to discuss human evolution in terms of probability (εἰκός: *Leg.* 678b),<sup>66</sup> and the *Kulturgeschichte* is over.

The Athenian stranger crafts his narrative with some familiar elements. Like Archelaus and Protagoras, he follows Xenophanes in making culture something that requires human initiative. Like the Platonic Protagoras, he imagines human cultural evolution taking place in an environment determined by divinity (e.g. the unnamed θεός in *Leg.* 670b)<sup>67</sup> and impersonal αἰτίαι (cataclysmic disasters, human solitude, human fear, human technical knowledge, human desire for company, human forgetfulness).<sup>68</sup> Unlike the Protagorean gods, however, his are not invoked to explain human ethical evolution (from primitive to modern). Instead of gods, he offers probability (εἰκός): surely, given the likely natural environment he posits and the vast amount of time he allows, societies will inevitably evolve along the general lines he draws. Primitives will always flock to dynasts like birds of a feather, until numbers reach critical mass and they begin to recognize explicit laws for towns that turn insensibly into cities. The naturalism here (in the relative abeyance of deity) and the gradualism (in the slow accumulation of mutually interacting factors that lead to increasingly complex societies) show that by Democritus' day, the Critical Tradition had acquired the concepts and critical awareness necessary for crafting a sophisticated narrative explaining and illustrating the dictum of Xenophanes:

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66 Note that this probability (εἰκός) is an indefinite likelihood that exists in narrative without being minutely calculable. As far as I can tell, none of the ancient sources examined in this chapter affects the mathematical precision that characterizes the outlook of modern statisticians. See page 135 above.

67 Compare the role(s) played by Epimetheus, Prometheus, and Zeus in the myth of Protagoras.

68 Compare the role(s) played by interspecific war and intraspecific injustice in the myth of Protagoras.

οὔτοι ἀπ' ἀρχῆς πάντα θεοὶ θνητοῖς ὑπέδειξαν, / ἀλλὰ χρόνῳ ζητοῦντες ἐφευρίσκουσιν ἄμεινον (DK21B18).<sup>69</sup> The more we investigate how the Athenian's *Kulturgeschichte* resonates with the Democritean corpus, the more reason we have to suspect that these developments in the Tradition did not escape Democritus. From the work we have already done, two important facts are already apparent: (1) Democritus imagined material necessity (ἀνάγκη) as the engine creating every species of order that exists, has existed, or will exist anywhere;<sup>70</sup> (2) Democritus crafted some sort of narrative (or narratives) explaining various kinds of order in human society—as the result(s) of human learning (fr. 559, 561 Luria) and necessity (fr. 568 Luria).<sup>71</sup> What did that Democritean narrative (or narratives) look like? While we cannot say for certain, lacking definitive evidence, the Athenian stranger allows us to begin making educated guesses. Not only does his account constitute an extensive, intact instance of Critical *Kulturgeschichte* contemporary with Democritus, it also shows some significant resonance with what remains of the Democritean corpus. We have already noted some of this resonance in passing; it is time to look at it more closely, exploring its contribution to our understanding of Democritean

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69 See page 43 above. While there is enough evidence to suggest that the Critical Tradition already told relatively developed stories about human evolution well before the fourth century (see chapter 1), the Athenian stranger provides one of the earliest clear instances of such a narrative in the historical record.

70 See chapter 2.

71 See pages 190-200 above. Other fragments confirm that Democritus saw social order coming and going, waxing and waning with time (just like other kinds of order created by necessity). Remember that the *νομίζον* in fr. 562 Luria (quoted on page 188) comes into being over time, indicating that Democritus imagined a time when it did not exist (see note 33 above in this chapter). Here we should also notice fr. 613 Luria (= Stob. 4.5.48), which discusses how it is impossible for magistrates in a city to avoid doing wrong and/or being wronged: the fragment refers to the urban political environment that creates this problem as existing *τῷ νῦν καθεστῶτι ῥυθμῶι*, a deliberately explicit phrase showing that the atomist recognized the existence of other social *ῥυθμοί* in space and time. What do these *ῥυθμοί* look like? How are they related? These are the questions we are grappling with here.

*Kulturgeschichte* in greater depth.

The resonance that demands attention is the likeness between the Athenian stranger's αἰτίαι and early atomist ἀνάγκη. Both αἰτίαι and ἀνάγκη exist to describe generic similarity in particular incidents of repetitive reality. What keeps the Athenian stranger's cycle intact over countless iterations is not the one-time work of unique individual agents (human or divine), but the fact that αἰτίαι remain constant: the same generic stimuli continually produce the same generic series of human responses, with particular deviations possible.<sup>72</sup> The ἀνάγκη of the early atomists is responsible for particular instances of generic patterns in the same way, with individual humans and worlds providing so many different examples of the Democritean universals ἄνθρωπος and κόσμος over time.<sup>73</sup> So both the Athenian stranger and Democritus tell stories in which generic elements remain the same as particulars vary over time: the Athenian parses these generic elements as separate things (different factors in the environment that remain constant), where Democritus combines them all under the rubric of material necessity. The Athenian shows us that this kind of story-telling can be used to create a *Kulturgeschichte*, with probability (εἰκός) mediating between the storyteller's ignorance of particulars in any individual historical instance and his need to tell a generically true and complete tale. This is essentially the same technique that Democritus is on record

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<sup>72</sup> See e.g. *Leg.* 677a, where the initial disaster happens to be a flood, and 677d, where the stranger names the most recent inventors of recurrent human arts (which others presumably invented before, perhaps quicker or better, and others yet will invent again as the cycle repeats itself).

<sup>73</sup> See chapter 2.2-3 above, esp. pages 130-141. The nature of atoms and void is such that they inevitably come together in patterns that produce humanity (groups of animate beings sharing some fundamental, generic characteristics to which each individual adds unique, particular variations whose existence depends on that individual's unique placement in history).

using in fr. 561 Luria (quoted on page 190 above), where chance (τύχη) impregnates a mare by an ass, teaching men who happen to be observing how to breed mules. Material necessity determines the generic facts of this situation: fertile matings between asses and mares occur, resulting in mules; and human beings exist, with the ability to observe and learn from their observations. The coincidence of these generic, necessary facts in a particular historical moment in time, however, is a matter of probability, occurring only κατὰ τύχην (fr. 561 Luria).<sup>74</sup> Given this fragment and its coherence with the rest of the early atomist corpus, it is likely that the narrative(s) of cultural development composed by Democritus utilized this kind of reasoning, which the Athenian stranger demonstrates to have been current in the Critical Tradition contemporary with the atomist.

The correctness of this interpretation is confirmed when we compare the historical effects of the Athenian's αἰτίαι with what is known about the biological consequences of early atomist ἀνάγκη. In the Athenian's account, divine providence and other αἰτίαι cause primitive human beings to gather like flocks of birds (*Leg.* 680b-e) and establish dynasties—natural societies whose members live by unstudied, unwritten habits that ruling elders imprint on the rising generation.<sup>75</sup> We have already seen how Democritean ἀνάγκη similarly causes conspecific animals to herd together spontaneously<sup>76</sup> and makes the individual animal perceive and react to its environment by receiving atomic

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<sup>74</sup> See the discussion of necessity in chapter 2.2 above, especially the discussion of fr. 103 Luria (quoted on pages 125-135).

<sup>75</sup> The Athenian refers to these primitive habits as πατρῖοι νόμοι (*Leg.* 680a, quoted on page 204 above).

<sup>76</sup> See fr. 316 Luria (quoted above on page 127), which makes explicit reference to flocks of birds as instances of early atomist necessity.

impressions from it.<sup>77</sup> Knowing that Democritus imagined humans sharing morality with other animals<sup>78</sup> and adding their own traditions to this shared morality over time,<sup>79</sup> it is not much of a stretch to conclude that he had his own version(s) of the story told by the Athenian stranger. Mirroring the path taken by the Athenian, this version (or versions) would have articulated the primordial state of man in atomist terms, invoking ἀνάγκη rather than the Athenian's αἰτία to explain how the first humans established a natural order or orders culminating in the modern πόλις. The atomist narrative(s) would rely on probabilistic reasoning like that invoked by the Athenian, arguing that the nature of atoms is such that they invariably fall into certain generic patterns in the void (patterns like those indicated by the words κόσμος and ἄνθρωπος). The particular variations in individual instances of these patterns would not be important to the atomist, who would be trying to account for human culture as something generic and re-inventable rather than as the unique, one-off discovery of a single historical person or persons.<sup>80</sup> Foundational

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77 See chapter 2.3-4 above, esp. fr. 579 Luria and B166 DK (quoted on page 174).

78 See section 3.2.1 above.

79 See Cole's (1967) interpretation of fr. 562 Luria offered above in note 33. In that fragment, Democritus has humans and animals sharing the habit of getting offspring; to this habit, humans eventually add (for reasons unspecified) a custom that the parent expects benefit from the offspring.

80 Notice that Democritus finds the animal morality discussed in fr. 621 Luria valid in every world (ἐν παντὶ κόσμῳ: see page 185 for the full quote). This morality is generic rather than particular: it appears in the history of every individual world as something constant. This does not mean that it looks exactly the same in every world, only that its idiosyncrasies in any particular instance do not render it unrecognizable as one more example of its generic class. This is clear when we consider the example attributed to Democritus in fr. B165 DK and 103 Luria (quoted on pages 129-125): people may look very different in individual instances, but we are all recognizably members of the same generic animal species. Whatever our differences, we all answer to the descriptor ἄνθρωπος. Assuming that Democritus approached human νόμος from a similar position (as fr. 621 suggests he did), he would understand it to encompass at once everything that people do in any world and that which a particular person happens to be doing in a particular world. A history of human νόμος written by Democritus would thus be a generic history (striving to accommodate all instances of human νόμος conceivable in an infinite atomist multiverse).

events in this atomist *Kulturgeschichte* would be coincidences likely to occur and recur,<sup>81</sup> coincidences like the one Democritus imagines being responsible for mankind's discovery of the mule in fr. 579 Luria (or the world-altering catastrophes posited by the Athenian stranger).<sup>82</sup>

For now, this is as close as the Athenian stranger can bring us to Democritean *Kulturgeschichte*.<sup>83</sup> While we find a generic resemblance between his αἰτίαι and atomist ἀνάγκη (both create narrative worlds in which human societies arise as expressions of natural order), the Athenian and Democritus diverge significantly when we consider the particulars of their respective accounts of human culture: for the Athenian, culture is fundamentally a product of human lawgivers, whether the uncritical dynast of the mountain clan or the self-conscious legislator of the growing city; for Democritus, on the other hand, culture begins with non-human animals<sup>84</sup> and reaches us only via chance

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81 Who knows how many times the mule was invented in the history of the atomists' particular κόσμος? Presumably, it might have been discovered more than once, by different people. Democritus is interested in the possibility that someone or ones did discover it at some time, not in pinpointing a precise historical identity for the successful inventor(s).

82 Here as elsewhere, the Critical Tradition conceives order as plural and repetitive, an emergent property of continuous processes whose general outcome is knowable even if it cannot be minutely predicted in particular instances. The accent on probability and repetition in the Athenian stranger's story and in what remains of Democritus appears consonant with the eternal cosmic cycles invoked by earlier thinkers in the Critical Tradition like Heraclitus (fr. 51 Marcovich, quoted on page 44) and Empedocles (fr. 21 Inwood, quoted on page 68), and with the multiple κόσμοι invoked by Anaxagoras (fr. B4a DK, quoted on page 87). Considering how the Athenian stranger's cycle recalls these cycles in its attempt to create a general story of order covering all specific instances of it, the question naturally arises: could the Heraclitean, Empedoclean, and Anaxagorean cosmogonies be some of the παλαιοὶ λόγοι that the Athenian stranger refers to as sources for his story (*Leg.* 677a)? While it is impossible to answer this question definitively, a positive answer appears at least plausible.

83 The present discussion does not by any means exhaust the resonance between the Democritean corpus and Plato's Athenian stranger, who says many things in the *Leges* that converge with words and ideas attributed to the atomist. Some important convergences in book 3 that have not yet been treated in this study include (a) the approach to traditional poetry and (b) the role of pleasure in determining νόμοι. Both will be discussed later as they become relevant.

84 See fr. 559 Luria, quoted on page 190. Where the Athenian merely compares primitive men to animals, Democritus makes them learn directly from animals.



discoveries exploited by lucky inventors.<sup>85</sup> In the world-order of Democritus, then, culture is not necessarily human (at least not in origin), and its transmission does not depend fundamentally on the mediation of authoritative lawgivers. Thus, while the Athenian provides us insight into the form that Democritus' *Kulturgeschichte* likely took—with atomist ἀνάγκη and τύχη standing in the same relation to one another as αἰτίαι and εἰκός in the story of the Athenian—it cannot tell us much about how Democritus developed that form. It tells us nothing about how a Critical thinker like the atomist might have imagined animals teaching humans, and it offers no explicit theory of cultural development predicated on accident.<sup>86</sup> For insight into these elements as they appear in the fragments of Democritus, we have to bring in other accounts of cultural evolution.

**(4) Polybius, *Historiae* 6.5.1-6.10.12.** Unlike the *Kulturgeschichte* already considered, this one definitely postdates Democritus: Polybius lived near the turn of the third century BCE, several generations after the early atomists. His relevance to our discussion arises from the similarity evident between his narrative and those that we have already seen (especially the story of the Athenian stranger). Before we examine that similarity more closely, it is interesting to note that Polybius himself recognized that his account was derivative, a digest concocted from earlier sources:

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85 See fr. 561 Luria, quoted on page 190.

86 Though it does seem to presuppose the existence of such theories, e.g. when the Athenian assumes that primitive people will inevitably (re)discover the art of mining, given sufficient time (*Leg.* 678c-e). Presumably the Athenian could have offered some idea of how this (re)discovery would occur, a generic story tracing the origin of mining to a probable accident, even though he does not. The only accident he assumes explicitly is the recurring world-altering disaster that resets his cycle.

TEXT ( <i>Buettner-Wobst</i> )	TRANSLATION ( <i>Paton</i> )
ἀκριβέστερον μὲν οὖν ἴσως ὁ περὶ τῆς κατὰ φύσιν μεταβολῆς τῶν πολιτειῶν εἰς ἀλλήλας διευκρινεῖται λόγος παρὰ Πλάτωνι καὶ τισιν ἑτέροις τῶν φιλοσόφων· ποικίλος δ' ὢν καὶ διὰ πλειόνων λεγόμενος ὀλίγοις ἐφικτός ἐστιν. διόπερ ὅσον ἀνήκειν ὑπολαμβάνομεν αὐτοῦ πρὸς τὴν πραγματικὴν ἱστορίαν καὶ τὴν κοινὴν ἐπίνοιαν, τοῦτο πειρασόμεθα κεφαλαιωδῶς διελθεῖν· καὶ γὰρ ἂν ἐλλείπειν τι δόξη διὰ τῆς καθολικῆς ἐμφάσεως, ὁ κατὰ μέρος λόγος τῶν ἐξῆς ῥηθησομένων ἱκανὴν ἀνταπόδοσιν ποιήσει τῶν νῦν ἐπαπορηθέντων.	Perhaps this theory of the natural transformations into each other of the different forms of government is more elaborately set forth by Plato and certain other philosophers; but as the arguments are subtle and are stated at great length, they are beyond the reach of all but a few. I therefore will attempt to give a short summary of the theory, as far as I consider it to apply to the actual history of facts and to appeal to the common intelligence of mankind. For if there appear to be certain omissions in my general exposition of it, the detailed discussion which follows will afford the reader ample compensation for any difficulties now left unsolved.
	Polyb. 6.5.1-3

Polybius presents his story frankly as a summary of earlier work (τοῦτο πειρασόμεθα κεφαλαιωδῶς διελθεῖν), tracing the lineage of his *Kulturgeschichte* back to Plato and other, unnamed philosophers (παρὰ Πλάτωνι καὶ τισιν ἑτέροις τῶν φιλοσόφων) who wrote more subtly and at greater length than he.<sup>87</sup> It is quite possible that Democritus was one of Polybius' anonymous sources: we know that the atomist wrote a great deal,<sup>88</sup> and that his output included *Kulturgeschichte* whose remnants appear remarkably like what we find in Polybius (whose work here certainly belongs in the Critical Tradition).<sup>89</sup>

<sup>87</sup> Plato (*Resp.* 8) and Aristotle (*Polit.* 3) preserve traces of historical narratives like the one Polybius gives intact, narratives in which healthy polities exist in different shapes that alter in regular ways when they become diseased. Democritus is thus not alone in speaking of human societies as plastic shapes that mutate over time: his contribution is to discuss those shapes from a Critical atomist perspective.

<sup>88</sup> See fr. cxv Luria and chapter 2.1 above.

<sup>89</sup> For a detailed argument supporting Democritus as a source for Polybius, see Cole (1967), 107-130. In this study, I am more interested in hermeneutics than in *Quellenforschung*: while the possibility that Democritus may have been a source for Polybius is noteworthy (and I find Cole's thesis convincing), my own argument does not require that it be decided one way or the other.

Whatever one makes of the possibility that the historian drew directly from the atomist, which remains unproven,<sup>90</sup> the convergence evident between Polybius, Plato's Athenian stranger, and the atomist is definitely worth attention.

Immediately after the above statement, Polybius launches into a cyclical account of human cultural evolution that follows the narrative of the Athenian stranger closely and improves upon it significantly, sometimes in ways that remind us of Democritus. Like the Athenian, he begins by positing the occurrence and recurrence of world-altering disasters (6.5.4-6). In the wake of these disasters, mankind is reduced to a familiar state of nature, without customs (ἐπιτηδεύματα) or arts (τέχναι: 6.5.6). Just like the mountain-folk in the Athenian's narrative, Polybius' primitives initially herd together like animals (καθάπερ ἐπὶ τῶν ἄλλων ζώων ... καὶ τούτους εἰς τὸ ὁμόφυλον συναγελάζεσθαι: 6.5.7).<sup>91</sup> After its formation, this natural community goes through a familiar three-stage evolution: in the beginning, it is ruled by a primitive monarch (6.5.4-6.7.5);<sup>92</sup> he is succeeded eventually by an aristocracy (6.7.6-6.8.7),<sup>93</sup> which in time turns inevitably into a democracy (6.9).<sup>94</sup> Unlike the Athenian stranger, Polybius resets his cycle not with the

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90 Cole (1967) is ultimately obliged to offer his thesis as no more than an interesting suggestion, since there is no blatant smoking gun identifying Democritus as a source for Polybius. Our ignorance of other accounts available, particularly when much of the extant work in the Critical Tradition looks so similar, makes it hard to assign attribution without uncontested proof. Polybius might just as easily be drawing on Plato, Archelaus, Anaxagoras, or some other thinker as (or in addition to) Democritus.

91 Notice that Polybius' verb συναγελάζεσθαι is the very same verb that Democritus uses to talk about the spontaneous herding of animals in fr. 319 Luria: «καὶ γὰρ ζῶια, φησὶν, ὁμογενέσι ζώοις συναγέλλεται ὡς περιστεραὶ περιστεραῖς καὶ γέραναι γεράνοις καὶ ἐπὶ τῶν ἄλλων ἀλόγων ὡσαύτως» (Sext. *Adv. math.* 7.116). Like Democritus in this fragment, Polybius stresses the homogeneity of animals in a herd (τούτους εἰς τὸ ὁμόφυλον συναγελάζεσθαι): like goes with like.

92 Compare the elderly dynast that rules the isolated mountain clan in the story of the Athenian stranger.

93 Compare what happens when multiple dynasts unite their clans in the story of the Athenian stranger.

94 Compare the climax community in the story of the Athenian stranger, a city-state in which every form and experience of human life exists: τρίτον τοῖνυν εἶπωμεν ἔτι πολιτείας σχῆμα γιγνόμενον, ἐν ᾧ δὴ πάντα εἶδη καὶ παθήματα πολιτειῶν καὶ ἅμα πόλεων συμπίπτει γίγνεσθαι (*Leg.* 681d). In the

recurrence of a physical disaster (though he explicitly notes that these do recur in 6.5.6), but with the natural moral degeneration of democracy, which brings about an inevitable resurgence of the primitive monarch (6.9.7).<sup>95</sup>

Like Protagoras and the Athenian stranger, Polybius constructs human cultural evolution as a series of responses to recurring impersonal αἰτίαι—a series that can be predicted by appeals to probability (εἰκός: 6.5.7 *et passim*).<sup>96</sup> As in the *Kulturgeschichte* of Protagoras and the Athenian stranger, so in that of Polybius the various impersonal αἰτίαι invoked are of two sorts: external environmental factors impinging on humanity regularly over time; and generic human character (which reacts predictably to recurring constants in its environment).<sup>97</sup> Unlike the Athenian stranger, Polybius parses his αἰτίαι carefully, explaining in detail how they drive his cycle inevitably from one stage to the next in a continuous natural progression. Three Polybian αἰτίαι worth examining with particular attention here are (i) the human ἀσθένεια that forms the first human society and

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*Republic*. Plato's Socrates describes democracy as the polity which contains all other polities (i.e. every form and experience of human life): κινδυνεύει, ἣν δ' ἐγώ, καλλίστη αὕτη τῶν πολιτειῶν εἶναι: ὥσπερ ἰμάτιον ποικίλον πᾶσιν ἄνθεσι πεποικιλμένον, οὕτω καὶ αὕτη πᾶσιν ἡθεσιν πεποικιλμένη καλλίστη ἂν φαίνοιτο ... ὅτι πάντα γένη πολιτειῶν ἔχει διὰ τὴν ἐξουσίαν, καὶ κινδυνεύει τῷ βουλομένῳ πόλιν κατασκευάζειν, ὃ νυνδὴ ἡμεῖς ἐποιοῦμεν, ἀναγκαῖον εἶναι εἰς δημοκρατουμένην ἐλθόντι πόλιν, ὃς ἂν αὐτὸν ἀρέσκηι τρόπος, τοῦτον ἐκλέξασθαι, ὥσπερ εἰς παντοπώλιον ἀφικομένῳ πολιτειῶν, καὶ ἐκλεξαμένῳ οὕτω κατοικίξειν (*Rep.* 557c-d). No close reader of Plato is surprised by the place of democracy in Polybius' narrative.

95 This discrepancy seems to support Polybius' admission in 6.5.1-3 that his account harmonizes more than one source. As it stands, his narrative offers two ways for the cycle to restart: (1) a terrible cataclysm destroys civilization; (2) civilization implodes naturally after undergoing a natural cycle of growth, acme, and decay. Polybius does not explicitly address the relationship between these two plot-lines. Another confirmation that Polybius is weaving multiple sources together is the fact that he makes no effort to discuss the rediscovery of the τέχναι that disappear in 6.5.6.

96 Polybius goes out of his way to emphasize this aspect of his narrative: ταῦτά τις σαφῶς ἐπεγνωκῶς χρόνοις μὲν ἴσως διαμαρτήσεται λέγων ὑπὲρ τοῦ μέλλοντος περὶ πολιτείας, τὸ δὲ ποῦ τῆς αὐξήσεως ἕκαστόν ἐστιν ἢ τῆς φθορᾶς ἢ ποῦ μεταστήσεται σπανίως ἂν διασφάλλοιτο, χωρὶς ὀργῆς ἢ φθόνου ποιούμενος τὴν ἀπόφασιν (6.9.11). Unlike his predecessors, he makes no mention whatsoever of gods.

97 See page 208 above.

keeps it intact (resetting the cycle when democracy becomes cheirocracy and collapses into civil war); (ii) the inevitable circumstances that create an idea of δικαιοσύνη and spread it throughout the community; and (iii) the περισυσία that brings about the collapse of each civilized form of government (kingship, aristocracy, democracy). The historian presents these αἰτίαι in ways strikingly reminiscent of what we find in the Democritean corpus: more than just one more instance of a developed Critical *Kulturgeschichte*, Polybius' work provides unique insight into how Democritus might have gone about constructing an atomist narrative (or narratives) in that genre.

(i) Consider how primitive monarchy (the natural prelude to civilized kingship) arises at the very beginning of Polybius' cycle:

TEXT ( <i>Buettner-Wobst</i> )	TRANSLATION ( <i>Paton</i> )
<p>ποίας οὖν ἀρχὰς λέγω καὶ πόθεν φημὶ  φύεσθαι τὰς πολιτείας πρῶτον; ὅταν ἢ διὰ  κατακλυσμοὺς ἢ διὰ λοιμικὰς περιστάσεις  ἢ διὰ ἀφορίας καρπῶν ἢ δι' ἄλλας  τοιαύτας αἰτίας φθορὰ γένηται τοῦ τῶν  ἀνθρώπων γένους, οἷας ἤδη γεγονέναι  παρειλήφαμεν καὶ πάλιν πολλάκις ἔσεσθ'  ὁ λόγος αἰρεῖ, τότε δὴ συμθφειρομένων  πάντων τῶν ἐπιτηδευμάτων καὶ τεχνῶν,  ὅταν ἐκ τῶν περιλειφθέντων οἷον εἰς  σπερμάτων αὐθις αὐξηθῇ σὺν χρόνῳ  ἀνθρώπων, τότε δήπου, καθάπερ ἐπὶ τῶν  ἄλλων ζώων, καὶ ἐπὶ τούτων συναθροίζο-  μένων—ὅπερ εἰκός, καὶ τούτους εἰς τὸ  ὁμόφυλον συναγελάζεσθαι διὰ τὴν τῆς  φύσεως ἀσθένειαν—ἀνάγκη τὸν τῇ  σωματικῇ ῥώμῃ καὶ ψυχικῇ τόλμῃ  διαφέροντα, τοῦτον ἡγεῖσθαι καὶ κρατεῖν,  καθάπερ καὶ ἐπὶ τῶν ἄλλων γενῶν  ἀδοξοποιήτων ζώων θεωρούμενον τοῦτο</p>	<p>What then are the beginnings I speak of  and what is the first origin of political  societies? When, owing to floods, plagues,  failure of crops or other such causes there  occurs such a destruction of the human race  as tradition tells us has more than once  happened, and as we must believe all often  happen again, all arts and crafts perishing  at the same time, when springing from the  survivors as from seeds men have again  increased in numbers and just like other  animals form herds—it being a matter of  course that they too should herd together  with those of their kind owing to their  natural weakness—it is a necessary  consequence that the man who excels in  bodily strength and courage will lead and  rule over the rest. We observe and should  regard as a most genuine work of nature  this very phenomenon in the case of other</p>

<p>χρὴ φύσεως ἔργον ἀληθινώτατον νομίζειν, παρ' οἷς ὁμολογουμένως τοὺς ἰσχυροτάτους ὀρώμεν ἡγουμένους, λέγω δὲ ταύρους, κάπρους, ἀλεκτρυόνας, τὰ τούτοις παραπλήσια. τὰς μὲν οὖν ἀρχὰς εἰκός τοιούτους εἶναι καὶ τοὺς τῶν ἀνθρώπων βίους, ζωηδὸν συναθροιζομένων καὶ τοῖς ἀλκιμωτάτοις καὶ δυναμικωτάτοις ἐπομένων· οἷς ὅρος μὲν ἐστὶ τῆς ἀρχῆς ἰσχύς, ὄνομα δ' ἂν εἴποι τις μοναρχίαν.</p>	<p>animals which act purely by instinct and among whom the strongest are always indisputably the masters—I speak of bulls, boars, cocks, and the like. It is probable then that at the beginning men lived thus, herding together like animals and following the lead of the strongest and bravest, the ruler's strength being here the criterion of his real power and the name we should give this being monarchy.</p> <p>Polyb. 6.5.4-9</p>
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The narrative of causation evident here follows Protagoras<sup>98</sup> rather than the Athenian stranger.<sup>99</sup> Where the Athenian stranger's primitive humans gather together because they do not want to be lonely, Protagoras and Polybius' aborigines socialize on account of their weakness (εἰς τὸ ὁμόφυλον συναγελάζεσθαι διὰ τὴν τῆς φύσεως ἀσθένειαν). In the myth of Protagoras, this weakness is discussed in detail: people lack the ability to compete with other animal species (armed with various physical characteristics like fur, fangs, and claws) individually in the war to decide who survives. The external threat of savage beasts with superior natural attributes puts pressure on humanity to change the way it expresses its moral character, making collectivism a necessity for survival. While

98 See page 198, which discusses Plato, *Protag.* 322a-c (quoted on page 197 above), especially the following sentence: ἀπώλλυντο οὖν ὑπὸ τῶν θηρίων διὰ τὸ πανταχῇ αὐτῶν ἀσθενέστεροι εἶναι, καὶ ἡ δημιουργικὴ τέχνη αὐτοῖς πρὸς μὲν τροφήν ἱκανὴ βοηθὸς ἦν, πρὸς δὲ τὸν τῶν θηρίων πόλεμον ἐνδεής (*Protag.* 322a-b).

99 Note the following passages: ἄρ' οὐχ ἄσμενοι μὲν ἑαυτοὺς ἑώρων δι' ὀλιγότητα ἐν τοῖς περὶ ἐκεῖνον τὸν χρόνον, πορεῖα δέ, ὥστ' ἐπ' ἀλλήλους τότε πορεύεσθαι κατὰ γῆν ἢ κατὰ θάλατταν, σὺν ταῖς τέχναις ὡς ἔπος εἰπεῖν πάντα σχεδὸν ἀπωλώλει; συμμίσγειν οὖν ἀλλήλοις οὐκ ἦν οἶμαι σφόδρα δυνατόν (*Leg.* 678c). πρῶτον μὲν ἡγάπων καὶ ἐφιλοφρονοῦντο ἀλλήλους δι' ἑρημίαν, ἔπειτα οὐ περιμάχητος ἦν αὐτοῖς ἡ τροφή (*Leg.* 678e). Though the Athenian stranger does mention defenses erected against marauding animals at one point, these are not introduced to explain society's existence: see note 60 above. Overall, the appearance of primitive humanity in the reckoning of the Athenian stranger is utopian (reminding one of Hesiod's golden race): his primitive man enjoys plenty of food and a morality that includes the happiness of civilization without any civilized vices (*Leg.* 678e-679d).

Polybius is not as explicit as Protagoras (as preserved by Plato), his later account definitely presumes a world similarly hard for the human individual to handle: human ἀσθένεια is the foundation he offers for society, the one permanent reason why we live together rather than apart. This rather dour outlook on the place of humanity and human society in the world finds significant resonance in the fragments of Democritus:

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
γινώσκειν χρεῶν ἀνθρωπίνην βιοτὴν ἀφαιρὴν τε ἐοῦσαν καὶ ὀλιγοχρόνιον πολλῆσι τε κηρσὶ συμπεφυρμένην καὶ ἀμηχανίῃσιν, ὅπως ἂν τις μετρίης τε κτήσιος ἐπιμέληται καὶ μετρήται ἐπὶ τοῖς ἀναγκαίοις ἢ ταλαιπωρίῃ. ( <i>Luria</i> )	Bisogna prendere consapevolezza della fragilità e della brevità della vita umana, che si rivela anche intessuta di molteplici sciagure e bisogni, in modo da curarsi di avere beni di proprietà misurati e da commisurare le tribolazioni inevitabili alle necessità vitali. ( <i>Luria, Krivushina</i> )  Democritus, fr. B285 DK = fr. D150 Taylor = fr. 646 Luria  Stob. 4.34.65
τὰ κατὰ τὴν πόλιν χρεῶν <sup>100</sup> τῶν λοιπῶν μέγιστα ἡγεῖσθαι, ὅπως ἄξεται εὖ, μήτε φιλονικέοντα παρὰ τὸ ἐπεικὲς μήτε ἰσχὺν ἑαυτῷ περιτιθέμενον παρὰ τὸ χρηστὸν τὸ τοῦ ξυνοῦ. πόλις γὰρ εὖ ἀγομένη μεγίστη ὀρθωσίς ἐστι, καὶ ἐν τούτῳ πάντα ἔνι, καὶ τούτου σωιζομένου πάντα σώζεται καὶ τούτου διαφθειρομένου τὰ πάντα διαφθείρεται. ( <i>DK</i> )	One should attach the greatest importance of all to the city's being well run, and not indulge in inappropriate rivalry or increase one's own power to the detriment of the community. For the city's being well run is the greatest good; everything is contained in that: if that is preserved, everything is preserved; if that is destroyed everything is destroyed. ( <i>Taylor, adapted</i> )  Democritus, fr. B252 DK = fr. D116 Taylor = fr. 595 Luria  Stob. 4.1.43

100 Luria (1970) deletes this word, apparently on the grounds that it is a later interpolation interrupting a Democritean adaptation of an ancient proverb since lost (though he finds another trace of the alleged

Like the aboriginal humans imagined by Protagoras and Polybius, Democritean man possesses a life that is inherently brief and fragile, fraught with disasters that he can never perfectly remedy (fr. 646 Luria). Like his Protagorean and Polybian counterparts, he must rely on community as his best hope for preserving and enjoying this tenuous life: if the community is lost, then all is lost (fr. B252 DK).<sup>101</sup> Humans band together because we must: in atomist terms, the same material necessity that makes the world makes us such that we only survive in company.

In Polybius' account, the same weakness that drives people together also pushes the strongest individual forward as the community's natural leader (ἀνάγκη τὸν τῇ σωματικῇ ῥώμῃ καὶ ψυχικῇ τόλμῃ διαφέροντα, τοῦτον ἡγεῖσθαι καὶ κρατεῖν: 6.5.7). This recalls one of the ethical sayings attributed to Democritus:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
φύσει τὸ ἄρχειν οἰκίῃον τῷ κρέσσονι.	Rule belongs by nature to the superior.  Democritus, fr. B267 DK = fr. D131 Taylor = fr. 688 Luria  Stob. 4.6.19

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proverb in Sophocle. *Antigone* 189-190: see his commentary to fr. 595 on pages 891 and 1288). This is not enough to convince me that χρεών must be rejected here as a non-Democritean interpolation.

101 The importance of community is a recurring theme in the Democritean ethical corpus. The atomist condemns those who take pleasure in the misfortunes of those around them in fr. 678 Luria, and he denounces envy (φιλονικίη, φθόνος) as a threat to the community in fr. 679 and 679a Luria. On the positive side, fr. 633 Luria shows him praising the rich who act voluntarily to strengthen the community by helping those less fortunate than they are.



This fragment is sometimes cited as evidence that Democritus supported oligarchy or aristocracy on some level,<sup>102</sup> with the nature of the atomist's endorsement complicated by the fact that he explicitly prefers democracy to *δυνάσται* in fr. 596 Luria. Comparing Polybius with Democritus offers us an interesting new perspective: instead of endorsing aristocracy simply in the present, fr. 688 might present the fundamental *δίκη* that Democritean man shares with the animals as that *δίκη* exists historically before the introduction of uniquely human *νόμοι* (like the prohibition on killing enemies in certain situations, or the custom of parents expecting benefit from their children).<sup>103</sup> Perhaps necessity gives Democritean man a natural inclination toward brutal aristocracy that can evolve over time to prefer more humane government (such as democracy)—government which becomes possible as human nature evolves past the initial stage(s) of development where animal *ἰσχύς* is the governing quality (what Polybius refers to as the *ὄρος τῆς ἀρχῆς* in 6.5.3) in human society.<sup>104</sup>

In this context there are three more quotes from Democritus worth considering:

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102 E.g. Procopé (1989), 314; Taylor (1999), 230.

103 See section 3.2.1 above.

104 If this is the Democritean position, it seems remarkably close to the thesis that Plato gives Callicles in the *Gorgias*: ἡ δέ γε οἶμαι φύσις αὐτῇ ἀποφαίνει αὐτό, ὅτι δίκαιόν ἐστιν τὸν ἀμείνω τοῦ χειρόνος πλεόν ἔχειν καὶ τὸν δυνατώτερον τοῦ ἀδυνατωτέρου. δηλοῖ δὲ ταῦτα πολλαχοῦ ὅτι οὕτως ἔχει, καὶ ἐν τοῖς ἄλλοις ζώοις καὶ τῶν ἀνθρώπων ἐν ὅλαις ταῖς πόλεσι καὶ τοῖς γένεσιν, ὅτι οὕτω τὸ δίκαιον κέκριται, τὸν κρείττω τοῦ ἥττονος ἄρχειν καὶ πλεόν ἔχειν (483c-d). For a thorough discussion of this thesis, see *SEP*, s.v. “Callicles and Thrasymachus.” Unlike the atomist, Callicles expresses no preference for democracy and offers no *Kulturgeschichte*, appearing more interested in exploiting natural aristocracy than in understanding its history or evolving beyond it. While we are discussing him, it is interesting to note that Callicles ends up proposing an ethics that makes pleasure an absolute value and prefers certain pleasures over others (*Gorg.* 490c-495e); compare Democritus, fr. 615, 678, 695, 732, 734, 748, 750, 751, 753, 755, 756, 757, 759a, 771, 776, 788 Luria. At the very least, Callicles confirms that Democritus was not the only person of his era interested in natural aristocracy and the ethics of pleasure.

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor, amended</i> )
κρείσσων ἐπ' ἀρετὴν φανεῖται προτροπῇ χρώμενος καὶ λόγου πειθοῖ ἢ περ νόμῳ καὶ ἀνάγκῃ. λάθρη μὲν γὰρ ἀμαρτέειν εἰκὸς τὸν εἰργμένον ἀδικίῃς ὑπὸ νόμου, τὸν δὲ ἐς τὸ δέον ἡγμένον πειθοῖ οὐκ εἰκὸς οὔτε λάθρη οὔτε φανερώς ἔρδῃν τι πλημμελές. διόπερ συνέσει τε καὶ ἐπιστήμῃ ὀρθο- πραγέων τις ἀνδρεῖος ἅμα καὶ εὐθύγνωμος γίγνεται.	One will appear to promote virtue better by using encouragement and persuasion of speech rather than law and necessity. For it is likely that he who is held back from wrongdoing by law will err in secret, but that he who is urged to what must be done by persuasion will do nothing wrong either in secret or openly. Therefore the man who acts uprightly from understanding and knowledge becomes at once courageous and right-minded.  Democritus, fr. B181 DK = fr. D46 Taylor, fr. 607 Luria  Stob. 2.31.59
ἡ φύσις καὶ ἡ διδαχὴ παραπλήσιόν ἐστι. καὶ γὰρ ἡ διδαχὴ μεταρυσμοῖ τὸν ἄν- θρωπον, μεταρυσμοῦσα δὲ φυσιοποιεῖ	Nature and teaching are similar, for teaching reshapes the man, and in re- shaping makes his nature.  Democritus, fr. B33 DK = fr. D28 Taylor, fr. 682 Luria  Clem. <i>Strom.</i> 4.151; Stob. 2.31.65; Theodoret. 4.1, p. 100 Räder
οὐδεμία μηχανὴ τῷ νῦν καθεστῶτι ῥυθμῷ μὴ οὐκ ἀδικεῖν τοὺς ἄρχοντας, ἦν καὶ πάνυ ἀγαθοὶ ἔωσιν. οὐδενὶ γὰρ ἄλλῳ ἔοικεν ἢ ἐωυτῷ τὸν <***> αὐτὸν ἐφ' ἐτέροις γίνεσθαι. <sup>105</sup> δεῖ δὲ κως οὕτω καὶ ταῦτα κοσμηθῆναι, ὅπως ὁ μηδὲν ἀδικέων, ἦν καὶ πάνυ ἐτάζηι τοὺς ἀδικέοντας, μὴ	There is no way in the present organization of society not to do wrong to rulers, even if they are exceptionally good. For to none other than himself ... he is himself subject to others [text corrupt]. But things should somehow be arranged so that someone who does no wrong, even if he vigorously

105 Luria proposes an idiosyncratic restoration for this damaged line: οὐδενὶ γὰρ ἄλλῳ ἔοικεν ἢ τῷ αἰετὸν ἐφ' ἑρπετοῖσι γίνεσθαι. Here I follow the more cautious approach taken by DK (and Taylor), who leave the line unrestored. Even though the fragment is textually corrupt, it is generally agreed to discuss problems arising from the official scrutiny (εὐθυνα) that magistrates in the contemporary Greek city-state underwent upon completing their term of service. A good magistrate might make enemies by pursuing criminals relentlessly, incurring a really tough scrutiny and perhaps even legal penalties that he did not justly deserve. Democritus contemplates altering the shape of the contemporary Greek πόλις to remove this possibility that the righteous public servant might end up suffering for doing justice. See Procopé (1989), 316-317.

<p>ὕπ' ἐκείνους γενήσεται, ἀλλὰ τις ἢ θεσμός ἢ τι ἄλλο ἀμυνεῖ τῷ δίκαια ποιεῦντι.</p>	<p>prosecutes wrongdoers, does not become subject to them, but some law or other device will protect the person who does right.</p> <p>Democritus, fr. B266 DK = fr. Taylor, fr. 613 Luria</p> <p>Stob. 4.5.48</p>
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In fr. 607 Luria, the atomist identifies exhortation (προτροπή) and verbal persuasion (λόγου πείθω) as more effective means of influencing human behavior than law (νόμος) and necessity (ἀνάγκη). In fr. 682 and 613, he discusses the malleability of human nature as it exists in the individual (fr. 682, where instruction remakes the shape of the human being) and in the collective (fr. 613, where Democritus contemplates altering the shape of the fifth-century Greek πόλις). Together, these three statements show that the atomist recognized both that human nature is malleable (in the individual and the collective) and that the human environment offers different tools for shaping it: the one that comes to hand first (when primitive man reacts instinctively to the harsh reality of necessity confronted in fr. 646 Luria) is not always the most effective. This leads naturally to our next consideration: the origin(s) of moral values in Polybius' account.

(ii) After becoming a primitive monarchy, Polybius' society generates the moral values (conveniently summarized as δικαιοσύνη) necessary for the other three types of government (kingship, aristocracy, democracy) via a probabilistic evolutionary process whose careful articulation reminds us again of Democritus:

TEXT ( <i>Buettner-Wobst</i> )	TRANSLATION ( <i>Paton</i> )
<p>ὁ δὲ τρόπος τῆς ἀρχῆς καὶ τῆς γενέσεως τῶν εἰρημένων [τοῦ καλοῦ καὶ δικαίου τοῖς ἀνθρώποις, ὁμοίως δὲ καὶ τῶν ἐναντίων τούτοις] τοιόσδε. πάντων γὰρ πρὸς τὰς συνουσίας ὁρμώντων κατὰ φύσιν, ἐκ δὲ τούτων παιδοποιίας ἀποτελουμένης, ὅποτε τις τῶν ἐκτραφέντων εἰς ἡλικίαν ἰκόμενος μὴ νέμοι χάριν μηδ' ἀμύνοι τούτοις οἷς ἐκτρέφοιτ', ἀλλὰ που τάναντία κακῶς λέγειν ἢ δρᾶν τούτους ἐγχειροῖη, δηλὸν ὡς δυσαρεστεῖν καὶ προσκόπτειν εἰκὸς τοὺς συνόντας καὶ συνίδοντας τὴν γεγεννημένην ἐκ τῶν γεννησάντων ἐπιμέλειαν καὶ κακοπάθειαν περὶ τὰ τέκνα καὶ τὴν τούτων θεραπείαν καὶ τροφήν. τοῦ γὰρ γένους τῶν ἀνθρώπων ταύτῃ διαφέροντος τῶν ἄλλων ζώων, ἧι μόνοις αὐτοῖς μέτεστι νοῦ καὶ λογισμοῦ, φανερόν ὡς οὐκ εἰκὸς παρατρέχειν αὐτοὺς τὴν προειρημένην διαφορὰν, καθάπερ ἐπὶ τῶν ἄλλων ζώων, ἀλλ' ἐπισημαίνεσθαι τὸ γινόμενον καὶ δυσαρεστεῖσθαι τοῖς παροῦσι, προορωμένους τὸ μέλλον καὶ συλλογιζομένους ὅτι τὸ παραπλήσιον ἐκάστοις αὐτῶν συγκυρήσει. καὶ μὴν ὅταν που πάλιν ἄτερος ὑπὸ θατέρου τυχὼν ἐπικουρίας ἢ βοηθείας ἐν τοῖς δεινοῖς μὴ νέμῃ τῷ σώσαντι χάριν, ἀλλὰ ποτε καὶ βλάπτειν ἐγχειρῇ τοῦτον, φανερόν ὡς εἰκὸς τῷ τοιούτῳ δυσαρετεῖσθαι καὶ προσκόπτειν τοὺς εἰδότας, συναγανακτοῦντας μὲν τῷ πέλας, ἀναφέροντας δ' ἐφ' αὐτοὺς τὸ παραπλήσιον. ἐξ ὧν ὑπογίνεται τις ἔννοια παρ' ἐκάστῳ τῆς τοῦ καθήκοντος δυνάμεως καὶ θεωρίας ὅπερ ἐστὶν ἀρχὴ καὶ τέλος δικαιοσύνης.</p>	<p>The manner in which these notions [of goodness, justice, and their opposites among men] come into being is as follows. Men being all naturally inclined to sexual intercourse, and the consequence of this being the birth of children, whenever one of those who have been reared does not on growing up show gratitude to those who reared him or defend them, but on the contrary takes to speaking ill of them or ill treating them, it is evident that he will displease and offend those who have been familiar with his parents and have witnessed the care and pains they spent on attending to and feeding their children. For seeing that men are distinguished from the other animals by possessing the faculty of reason, it is obviously improbable that such a difference of conduct should escape them, as it escapes other animals: they will notice the thing and be displeased at what is going on, looking to the future and reflecting that they may all meet with the same treatment. Again when a man who has been helped or succored when in danger by another does not show gratitude to his preserver, but even goes to the length of attempting to do him injury, it is clear that those who become aware of it will naturally be displeased and offended by such conduct, sharing the resentment of their injured neighbor and imagining themselves in the same situation. From all this there arises in everyone a notion of the meaning and theory of the power of duty, which is the beginning and end of justice.</p> <p>Polyb. 6.6.1-7</p>

This passage recalls Democritus' discussion of the unique benefits that human parents expect from their children: like all animals, humans naturally participate in coitus and get children; unlike other animals, we have developed a long-standing tradition (referred to as a *κατάστασις τις ἀρχαίη* and a *νομίζον*)<sup>106</sup> by which the offspring are supposed to be an asset to their parents. How did we get this tradition, according to Democritus? While there is no simple, conclusive answer to this question, owing to lack of evidence, the early atomist corpus does provide enough information to let us make some very good guesses about what Democritus would have said about the origins of filial obligation (and other ethical values recognized in contemporary Greek society). As we will see, the evidence we have shows Democritus adopting a position on the evolution of human moral behavior very close to the one taken by Polybius, perhaps even identical with it.

Fr. 682 Luria provides our clearest abstract formulation of Democritus' conception of how humans acquire moral character: nature (*φύσις*) and instruction (*διδασχίη*) mould the human individual (*ὁ ἄνθρωπος*), giving him shape (*ῥυσμός*).<sup>107</sup> Other testimonia show that Democritus imagined the process of individual *ἄνθρωποι* perceiving and

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<sup>106</sup> See fr. 562 Luria, quoted above on page 188.

<sup>107</sup> In the Critical Tradition, *φύσις* is both agent (*n<sub>a</sub>*) and product (*n<sub>p</sub>*): the word designates both the result(s) of natural processes (*n<sub>p</sub>*) and the underlying reality controlling those processes (*n<sub>a</sub>*). From the Democritean perspective developed in chapter 2, *φύσις* (*n<sub>p</sub>*) is the result of material necessity (*ἀνάγκη*), which is the underlying reality—i.e. *φύσις* (*n<sub>a</sub>*)—responsible for all phenomena in the atomist universe. Necessity shapes human character by constituting man as a physical being whose existence is fundamentally restricted in certain ways (e.g. he must breathe) but otherwise open to development and alteration (e.g. the rate of his breathing may change, and there are any number of very different places where he can find air). Instruction shapes human character within the constraints set by material necessity, giving man better (or at least different) ways of conforming to the absolute demands of that necessity (*n<sub>a</sub>*). In this way, the living nature (*n<sub>p</sub>*) that material necessity provides to human beings is not morally neutral (i.e. certain moral aptitudes and tendencies appear hard-wired in mankind of necessity), and it can be altered through training (where necessity is flexible, e.g. when it comes to deciding whether to live in one city or another: see fr. 103 Luria, quoted on pages 125-137 above).

responding to external stimuli (whether accidents arising from untutored φύσις or lessons cultivated as part of deliberate διδασχή) much the same as Polybius does (in 6.6.1-7):

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
<p>(a) ὁ δὲ Φαβωρίνος ... λόγον τινὰ τοῦ Δημοκρίτου παλαιὸν ὥσπερ ἐκ καπνοῦ καθελὼν ἡμαυρωμένον οἷος ἦν ἐκκαθαίρειν καὶ διαλαμπρύνειν, ὑποθέμενος τοῦτο δὴ τοῦπιδήμιον ὃ φησι Δημόκριτος «ἐγκαταβυσσοῦσθαι τὰ εἶδωλα διὰ τῶν πόρων εἰς τὰ σώματα καὶ ποιεῖν τὰς κατὰ ὕπνον ὄψεις ἐπαναφερόμενα· φοιτᾶν δὲ ταῦτα πανταχόθεν ἀπιδόντα καὶ σκευῶν καὶ ἱματίων καὶ φυτῶν, μάλιστα δὲ ζώων ὑπὸ σάλου πολλοῦ καὶ θερμότητος οὐ μόνον ἔχοντα μορφοειδεῖς τοῦ σώματος ἐκμεμαγμένας ὁμοιότητας» (ὡς Ἐπίκουρος οἶεται μέχρι τούτου Δημοκρίτῳ συνεπόμενος, ἐνταῦθα δὲ προλιπὼν τὸν λόγον), «ἀλλὰ καὶ τῶν κατὰ ψυχὴν κινήματων καὶ βουλευμάτων ἐκάστῳ καὶ ἡθῶν καὶ παθῶν ἐμφάσεις ἀναλαμβάνοντα συνεφέλκεσθαι καὶ προσπίπτοντα μετὰ τούτων ὥσπερ ἔμψυχα φράζειν καὶ διαγγέλλειν τοῖς ὑποδεχομένοις τὰς τῶν μεθιέντων αὐτὰ δόξας καὶ διαλογισμοὺς καὶ ὁρμὰς, ὅταν ἐνάρθρους καὶ ἀσυγχύτους φυλάττοντα προσμίζῃ τὰς εἰκόνας».</p>	<p>Favorinus ... advanced an old argument of Democritus. Taking it down all blackened with smoke, as it were, he set about cleaning and polishing it. He used as foundation the familiar commonplace found in Democritus that spectral films penetrate the body through the pores and that when they rise they make us see things in our sleep. These films that come to us emanate from everything—from utensils, clothing, plants, and especially from animals, because of their restlessness and their warmth. The films have not only the impressed physical likeness in contour of an animal—so far Epicurus agrees with Democritus, though he drops the subject at this stage—but they catch up and convey by attraction spectral copies of each man's mental impulses, designs, moral qualities, and emotions. When they strike the recipient thus accompanied, they speak to him, as if they were alive, and report to him the thoughts, reasoning, and impulses of those from whom they escape, whenever the copies are still preserved whole and undistorted till contact is made. (<i>Minar</i>)</p> <p>Democritus, fr. A77 DK  = fr. 133a Taylor  = fr. 476 Luria</p> <p>Plut. <i>Quaest. Conv.</i> 8.10.2 p. 734f-735a</p>

<p>(b) φησὶν ἐκεῖνος (ὁ Δημόκριτος) ἐξιέναι (sc. τὰ εἴδωλα) τοὺς φθονοῦντας, οὐτ' αἰσθήσεως ἄμοιρα παντάπασιν οὐθ' ὀρμῆς, ἀνάπλεά τε τῆς ἀπὸ τῶν προῖεμένων μοχθηρίας καὶ βασκανίας, μεθ' ἧς ἐμπλασσόμενα καὶ παραμένοντα καὶ συνοικοῦντα τοῖς βασκαينوμένοις ἐπιτάραττειν καὶ κακοῦν αὐτῶν τό τε σῶμα καὶ τὴν διάνοιαν·</p>	<p>Ce philosophe affirme que les simulacres émis par les êtres méchants ne sont pas essentiellement exempts de sentiment ni d'intention, et qu'ils sont au contraire chargés de toute la malignité et de toute l'envie de celui dont ils émanent; c'est avec elles qu'ils s'impriment, demeurent et s'installent dans la victime, dont ils troublent et corrompent ainsi le corps en même temps que l'esprit. (<i>Fuhrmann</i>)</p> <p>Democritus, fr. A77 DK  = fr. 133b Taylor  = fr. 579 Luria</p> <p>Plut. <i>Quaest. conv.</i> 5.7.6, p. 682f</p>
<p>(c) Δημόκριτος μὲν γὰρ εὔχεσθαι φησι δεῖν, ὅπως εὐλόγχων εἰδώλων τυγχάνωμεν, καὶ τὰ σύμφυλα καὶ τὰ χρηστὰ μᾶλλον ἡμῖν ἐκ τοῦ περιέχοντος ἢ τὰ φαῦλα καὶ τὰ σκαιὰ συμφέρηται.</p>	<p>Democritus says we must pray that we meet with propitious images and that our environment brings us congenial and good images rather than mean and harmful ones. (<i>my translation</i>)</p> <p>Democritus, fr. 472a Luria</p> <p>Plut. <i>Aem.</i> 1.1.4</p>
<p>(d) Δημόκριτος δὲ εἴδωλά τινά φησιν ἐμπελάζειν τοῖς ἀνθρώποις καὶ τούτων τὰ μὲν εἶναι ἀγαθοποιὰ τὰ δὲ κακοποιά. ἔνθεν καὶ εὔχετο εὐλόγχων τυχεῖν εἰδώλων.</p>	<p>Democritus says that some <i>eidōla</i> encounter people, and of these some are beneficial and some harmful; hence he prayed to find propitious <i>eidōla</i>. (<i>Taylor</i>)</p> <p>Democritus, fr. B166 DK  = fr. 175b Taylor  = fr. 472a Luria</p> <p>Sext. <i>Adv. Math.</i> 9.19</p>

<p>(e) καὶ πάλιν· «δηλοῖ μὲν δὴ καὶ οὗτος ὁ λόγος, ὅτι ἔτεῃ οὐδὲν ἴδμεν περὶ οὐδενός, ἀλλ' ἐπιρυσμὶν ἑκάστοισιν ἡ δόξις». (<i>Luria</i>)</p>	<p>And again: 'This reasoning too shows that in verity we know nothing about anything, but opinion is for everyone a reshaping.' (<i>Bett</i>)</p> <p>Democritus, fr. B7 DK = fr. D20, 179a Taylor = fr. 49 Luria</p> <p>Sext. <i>Adv. Math.</i> 7.137</p>
<p>(f) δοκεῖ δέ μοι, ἦ δ' ὅς, ὄνου ἵππον βιασάμενου κατὰ τύχην κυῆσαι, μαθητὰς δὲ ἀνθρώπους τῆς βίας ταύτης γεγενημένους εἶτα μέντοι προελθεῖν ἐπὶ τὴν τῆς γονῆς αὐτῶν συνήθειαν.</p>	<p>It seems to me, [Democritus] says, that a mare once happened to give birth after having been raped by an ass, and men, getting the idea from this violent act, went on to develop this kind of breeding. (<i>Taylor</i>)</p> <p>Democritus, fr. A151 DK = fr. 145 Taylor = fr. 561 Luria</p> <p>Ael. <i>N. a.</i> 12.16</p>

These fragments offer an early atomist perspective on humanity that is already familiar from chapter 2: human beings exist as temporary clouds of atoms carried about in an environment saturated with other atomic clouds—including an infinite multitude of thin atomic films (εἶδωλα) that emanate continually from every discrete cloud. The live person exists in this environment as a discrete cloud of soul atoms enclosed by grosser atoms that make up the physical body. As long as he lives, he engages in three basic functions: (1) breathing (when incoming soul atoms replace those expelled by natural pressure); (2) perception (when films from another atomic cloud register in some sensory cortex as vision, sound, or thought); and (3) movement (when the reaction of the sensory



cortex to vision, sound, or thought moves soul atoms that move the grosser body).

Because of their importance in determining perception and movement (laxly rather than absolutely),<sup>108</sup> atomic εἶδωλα acquire the moral significance that appears explicit in fr. 472a, 476, and 579 Luria. In these fragments, Democritus asserts that images from the surrounding environment affect the individual for good or ill.<sup>109</sup>

As the individual human soul comes into proximity with images—the atomic εἶδωλα that happen to coincide with it at particular moments in time and space—the entire person experiences an evolution of moral character: certain images (e.g. those emanating from a person eaten up with φθόρος [b]) cause it harm, presumably because they engage its perceptive and motor capabilities in ways that are destructive. Others are beneficial (τὰ μὲν εἶναι ἀγαθοποιά [d]), presumably because they do the opposite. Every person hopes to meet with εἶδωλα ἀγαθοποιά and avoid the κακοποιά (c, d) so that his moral character improves (or remains good) rather than degenerating. The opinions that we carry around are unique and temporary reactions to εἶδωλα that we have met (e). These reactions give us information about our environment, information that we can use to modify our ethical behavior in significant ways (f).

From the foregoing, it appears that Democritus would have described the genesis of human moral traditions (like the ancient νομίζον that children benefit their parents) in

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<sup>108</sup> See chapter 2.2.1-2 above.

<sup>109</sup> τῶν κατὰ ψυχὴν κινήματων καὶ βουλευμάτων ἐκάστω καὶ ἡθῶν καὶ παθῶν ἐμφάσεις ἀναλαμβάνοντα συνεφέλκεσθαι ... φράζειν καὶ διαγγέλλειν τοῖς ὑποδεχομένοις τὰς τῶν μεθιέντων αὐτὰ δόξας καὶ διαλογισμοὺς καὶ ὁρμάς [a]. ἐμπλασσόμενα καὶ παραμένοντα καὶ συνοικοῦντα τοῖς βασκαιομένοις ἐπιταράττειν καὶ κακοῦν αὐτῶν τό τε σῶμα καὶ τὴν διάνοιαν [b]. Δημόκριτος μὲν γὰρ εὖχεσθαι φησι δεῖν, ὅπως... τὰ σύμφυλα καὶ τὰ χρηστὰ μᾶλλον ἡμῖν ἐκ τοῦ περιέχοντος ἢ τὰ φαῦλα καὶ τὰ σκαιὰ συμφέρεται [c]. τούτων τὰ μὲν εἶναι ἀγαθοποιά τὰ δὲ κακοποιά [d].

terms very similar to those used by Polybius to explain the origins of filial piety and justice in 6.6.1-7. Polybius' primitives discover moral virtue as a natural reaction to their observation of circumstances in the immediate environment: they perceive a specific instance of children treating their parents badly or some benefactor being misused by the object of his kindness, and they naturally fear that similar misfortune will befall them when they too become parents or benefactors. As a result of this perceptual experience, i.e. perceiving something in their environment and reflecting on it, they conceive an idea (ἔννοια) of justice (δικαιοσύνη)—an idea that can be shared with other people through words and behavior and so become entrenched in the community. Similarly, Democritus imagines men discovering the mule when someone witnesses the accidental coupling of a horse and an ass. A perceptual experience (observing an accident and its consequence) leads to a moral habit (as people systematically breed mules, expecting the replication of results that become more familiar and important to the individual and the community<sup>110</sup> as they are repeatedly reported and witnessed firsthand). In both authors, the environment naturally presents circumstances (parents and benefactors being abused, horses being raped by asses) that people inevitably perceive and turn into novel moral habits (treating parents and benefactors with unfailing deference, mating horse and asses on purpose to

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<sup>110</sup> From an early atomist perspective, it makes sense that the shape of an individual society be plastic like the shape of an individual human being. In early atomist thought, each is the momentary coagulation of a discrete cloud of moving atoms: the society differs from the individual only in being a larger and more diffuse cloud (with larger and more diffuse perceptive and motive capabilities commensurate with its containing more than one embodied human soul). Each exists in an evolving environment to which it responds naturally and necessarily, in a largely determined way: some things occur arbitrarily while others are invariable. Thus for the early atomist the history of an individual community, like the history of an individual human being, becomes a series of developments that are necessary to survival (the way breathing is necessary for the human individual) and accidental to it (the way having a certain number of fingers or living in a particular geographical area is for the human individual).

breed mules). Human morality is not a simple gift from the gods in either case (in contrast with the myth of Protagoras), but a result of people reacting to circumstances that occur and recur naturally in keeping with probability (εἰκός in Polybius 6.6.4 *et passim*, κατὰ τύχην in fr. 561 Luria).<sup>111</sup>

(iii) A final feature of Polybius' *Kulturgeschichte* with strong Democritean resonance is the material excess that invariably leads to political upheaval (overthrowing one regime and creating the conditions that give birth to the next one in the cycle):

TEXT ( <i>Buettner-Wobst</i> )	TRANSLATION ( <i>Paton</i> )
(a) ἐπεὶ δ' ἐκ διαδοχῆς καὶ κατὰ γένος τὰς ἀρχὰς παραλαμβάνοντες ἔτοιμα μὲν εἶχον ἤδη τὰ πρὸς τὴν ἀσφάλειαν, ἔτοιμα δὲ καὶ πλείω τῶν ἱκανῶν τὰ πρὸς τὴν τροφήν, τότε δὴ ταῖς ἐπιθυμίαις ἐπόμενοι διὰ τὴν περιουσίαν ἐξάλλους μὲν ἐσθῆτας ὑπέλαβον δεῖν ἔχειν τοὺς ἡγουμένους τῶν ὑποταττομένων, ἐξάλλους δὲ καὶ ποικίλας τὰς περὶ τὴν τροφήν ἀπολαύσεις καὶ παρασκευάς, ἀναντιρρήτους δὲ καὶ παρὰ τῶν μὴ προσηκόντων τὰς τῶν ἀφροδισίων χρείας καὶ συνουσίας. ἐφ' οἷς μὲν φθόνου γενομένου καὶ προσκοπῆς, ἐφ' οἷς δὲ μίσους ἐκκαιομένου καὶ δυσμενικῆς ὀργῆς, ἐγένετο μὲν ἐκ τῆς βασιλείας τυρρανίς, ἀρχὴ δὲ καταλύσεως ἐγεννᾶτο καὶ σύστασις ἐπιβουλῆς τοῖς ἡγουμένοις	But when they [the children of the first kings] received the office by hereditary succession and found their safety now provided for, and more than sufficient provision of food, they gave way to their appetites owing to this superabundance, and came to think that the rulers must be distinguished from their subjects by a peculiar dress, that there should be a peculiar luxury and variety in the dressing and serving of their viands, and that they should meet with no denial in the pursuit of their amours, however lawless. These habits having given rise in one case to envy and offense and in the other to an outburst of hatred and passionate resentment, the kingship changed into a tyranny; the first steps toward its overthrow were taken by the subjects, and conspiracies began to be formed.
	Polyb. 6.7.6-8

<sup>111</sup> Remember Xenophanes, fr. 18 DK: οὗτοι ἀπ' ἀρχῆς πάντα θεοὶ θνητοῖς ὑπέδειξαν, / ἀλλὰ χρόνῳ ζητοῦντες ἐφευρίσκουσιν ἄμεινον (Stob. 1.8.2). Democritus and Polybius represent two variations on what was already an old theme.

<p>(b) ὅτε δὲ διαδέξαιτο πάλιν παῖδες παρὰ πατέρων τὴν τοιαύτην ἐξουσίαν, ἄπειροι μὲν ὄντες κακῶν, ἄπειροι δὲ καθόλου πολιτικῆς ἰσότητος καὶ παρρησίας, τεθραμμένοι δ' ἐξ ἀρχῆς ἐν ταῖς τῶν πατέρων ἐξουσίαις καὶ προαγωγαῖς, ὀρμήσαντες οἱ μὲν ἐπὶ πλεονεξίαν καὶ φιλαργυρίαν ἄδικον, οἱ δ' ἐπὶ μέθας καὶ τὰς ἅμα ταύταις ἀπλήστους εὐωχίας, οἱ δ' ἐπὶ τὰς τῶν γυναικῶν ὕβρεις καὶ παίδων ἀρπαγὰς, μετέστησαν μὲν τὴν ἀριστοκρατίαν εἰς ὀλιγαρχίαν, ταχὺ δὲ κατεσκευάσαν ἐν τοῖς πλήθεσι πάλιν τὰ παραπλήσια τοῖς ἄρτι ῥηθεῖσιν διὸ καὶ παραπλήσιον συνέβαινε τὸ τέλος αὐτῶν γίνεσθαι τῆς καταστροφῆς τοῖς περὶ τοὺς τυράννους ἀτυχήμασιν.</p>	<p>But here again when children inherited this position of authority [in the aristocracy that succeeds kingship] from their fathers, having no experience of misfortune and none at all of civil equality and liberty of speech, and having been brought up from the cradle amid the evidences of power and high position of their fathers, they abandoned themselves to greed of gain and unscrupulous moneymaking, others to indulgence in wine and the convivial excess which accompanies it, and others again to the violation of women and the rape of boys; and thus converting the aristocracy into an oligarchy [they] aroused in the people feelings similar to those of which I just spoke, and in consequence met with the same disastrous end as the tyrant.</p> <p>Polyb. 6.8.4-6</p>
<p>(c) ὅταν δ' ἐπιγένωνται νέοι καὶ παισὶ παίδων πάλιν ἡ δημοκρατία παραδοθῇ, τότε οὐκέτι διὰ τὸ σύνηθες ἐν μεγάλῳ τιθέμενοι τὸ τῆς ἰσηγορίας καὶ παρρησίας ζητοῦσι πλέον ἔχειν τῶν πολλῶν· μάλιστα δ' εἰς τοῦτ' ἐμπίπτουσιν οἱ ταῖς οὐσίαις ὑπερέχοντες. λοιπὸν ὅταν ὀρμήσωσιν ἐπὶ τὸ φιλαρχεῖν καὶ μὴ δύνωνται δι' αὐτῶν καὶ διὰ τῆς ἰδίας ἀρετῆς τυγχάνειν τούτων, διαφθείρουσι τὰς οὐσίας, δελεάζοντες καὶ λυμαίνόμενοι τὰ πλήθη κατὰ πάντα τρόπον. ἐξ ὧν ὅταν ἅπαξ δωροδόκους καὶ δωροφάγους καρασκευάσωσι τοὺς πολλοὺς διὰ τὴν ἄφρονα δοξοφαγίαν, τότε ἤδη πάλιν τὸ μὲν τῆς δημοκρατίας καταλύεται, μεθίσταται δ' εἰς βίαν καὶ χειροκρατίαν ἢ δημοκρατία.</p>	<p>But when a new generation arises and the democracy falls into the hands of the grandchildren of its founders, they have become so accustomed to freedom and equality that they no longer value them, and begin to aim at preeminence; and it is chiefly those of ample fortune who fall into this error. So when they begin to lust for power and cannot attain it through themselves or their own good qualities, they ruin their estates, tempting and corrupting the people in every possible way. And hence when by their foolish thirst for reputation they have created among the masses an appetite for gifts and the habit of receiving them, democracy in its turn is abolished and changes into a rule of force and violence.</p> <p>Polyb. 6.9.5-7</p>

In Polybius' narrative, human culture evolves predictably in response to material excess (περιουσία,<sup>112</sup> ἔξουσiai καὶ προαγωγαι,<sup>113</sup> οὐσίαι<sup>114</sup>), material excess which children born into authority inevitably handle worse than their parents. This recurring failure of the heirs to an established regime causes it to collapse and make way for a new one (that is different but still subject to the weakness that destroyed its predecessor).

Compare the following fragments of Democritus that (a) recognize the role of material excess in the evolution of human culture and (b) discuss how different generations respond to wealth:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
(a <sub>1</sub> ) Δημόκριτος ... μουσικὴν φησι νεωτέραν εἶναι καὶ τὴν αἰτίαν ἀποδίδωσι λέγων μὴ ἀποκρίναι τὰναγκαῖον, ἀλλὰ ἐκ τοῦ περιεῦντος ἤδη γενέσθαι.	Democritus ... says that music is more recent, and identifies its cause, saying that it was not singled out by necessity, but arose as a result of plenty. <sup>115</sup>  Democritus, fr. B144 DK = fr. 213 Taylor = fr. 568 Luria  Philod. <i>De musica</i> 4.31, p. 108.29 Kemke; Herculaneum pap. 1497, col. 36.29-39

112 τότε δὴ ταῖς ἐπιθυμίαις ἐπόμενοι διὰ τὴν περιουσίαν ἐξάλλους μὲν ἐσθῆτας ὑπέλαβον δεῖν ἔχειν τοὺς ἡγουμένους κτλ. (a). The περιουσία invoked here exists after the kings have provided for all their subjects' material needs, including a physical habitat and the means to defend it: τόπους τε διαφέροντας ὀχυρούμενοι καὶ τειχίζοντες καὶ χώραν κατακτώμενοι, τὸ μὲν τῆς ἀσφαλείας χάριν, τὸ δὲ τῆς δαψιλείας τῶν ἐπιτηδείων τοῖς ὑποτεταγμένοις (Polyb. 6.7.4).

113 τεθραμμένοι δ' ἐξ ἀρχῆς ἐν ταῖς τῶν πατέρων ἐξουσίαις καὶ προαγωγαῖς, ὀρμήσαντες οἱ μὲν ἐπὶ πλεονεξίαν καὶ φιλαργυρίαν ἄδικον (b). For the implication of material abundance in these words, see LSJ s.v. ἐξουσία (iii) and προαγωγή (ii), which cite examples from the fifth, fourth, and third centuries. Paton supports this implication in context by translating τεθραμμένοι δ' ἐξ ἀρχῆς ἐν ταῖς τῶν πατέρων ἐξουσίαις καὶ προαγωγαῖς as “having been brought up from the cradle amid the evidences of power and high position of their fathers” (311). Material goods are always prominent among the evidences of political power.

114 μάλιστα δ' εἰς τοῦτ' ἐμπίπτουσιν οἱ ταῖς οὐσίαις ὑπερέχοντες (c).

115 For the complete fragment, see page 191 above.

<p>(b<sub>1</sub>) τοῖς παισὶ μάλιστα χρή τῶν ἀνυστῶν δατεῖσθαι τὰ χρήματα, καὶ ἅμα ἐπιμελεῖσθαι αὐτῶν, μή τι ἀτηρὸν ποιέωσι διὰ χειρὸς ἔχοντες· ἅμα μὲν γὰρ πολλὸν φειδότεροι γίνονται ἐς τὰ χρήματα καὶ προθυμότεροι κτᾶσθαι, καὶ ἀγωνίζονται ἀλλήλοισιν. ἐν γὰρ τῷ ξυνῶι τὰ τελεύμενα οὐκ ἀνιάι ὥσπερ ἰδίῃι οὐδ' εὐθυμεῖ τὰ ἐπικτώμενα, ἀλλὰ πολλῶι ἥσσον.</p>	<p>Those who can should as far as possible divide their wealth among their children, and at the same time keep an eye on them, to make sure that they do not do anything foolish when they get their hands on it. For at the same time they become much more thrifty over money and eager to get it, and they compete with one another. For what is spent in common does not hurt so much as what one spends for oneself, nor does profit made in common gladden one so much, but much less.</p> <p>Democritus, fr. B279 DK = fr. D143 Taylor = fr. 715 Luria</p> <p>Stob. 4.26.25</p>
<p>(b<sub>2</sub>) οἱ τῶν φειδωλῶν παῖδες ἀμαθέες γινόμενοι, ὥσπερ οἱ ὀρχησται οἱ ἐς τὰς μαχαίρας ὀρούοντες, ἢν ἑνὸς μούνου &lt;μη&gt; τύχῳσι καταφερόμενοι, ἔνθα δεῖ τοὺς πόδας ἐρεῖσαι, ἀπόλλυνται χαλεπὸν δὲ τυχεῖν ἑνός· τὸ γὰρ ἵχνιον μοῦνον λέλειπται τῶν ποδῶν οὕτω δὲ καὶ οὗτοι, ἢν ἀμάρτωσι τοῦ πατρικοῦ τύπου τοῦ ἐπιμελέος καὶ φειδωλοῦ, φιλέουσι διαφθεῖρεσθαι.</p>	<p>If the children of the thrifty turn out stupid, they are like people dancing on swords; if they make even one mistake in putting their foot down, they are lost (and it is difficult to find the precise place, for only the size of a footprint is left free). In the same way, if those people fail to acquire their father's cautious and thrifty character, they are apt to be ruined.</p> <p>Democritus, fr. B228 DK = fr. D92 Taylor = fr. 629 Luria</p> <p>Stob. 3.16.18</p>

We have already noticed (a) the distinction Democritus draws between necessities (things that animal and human life requires absolutely, e.g. food) and luxuries (things that arise as part of life without being necessary, e.g. music).<sup>116</sup> There are several fragments that

<sup>116</sup> See pages 173-184 above.

show this distinction as categorical for the atomist.<sup>117</sup> Fr. 568 Luria makes plain that the distinction is also chronological: necessities arise prior to luxuries in human culture (as in the Polybian *Kulturgeschichte*, wherein the first rulers of a particular regime always look to essential concerns before their descendants get distracted and cultivate the luxury that leads to envy that ultimately dissolves the regime). Likewise, we have already noted that Democritus showed special interest in (b) the getting and rearing of human children. Frr. 629 and 715 Luria show the atomist taking a position on inheritance that is very close to the position Polybius takes on rulers who inherit authority from their parents. Parents have to watch their children carefully, and there is great danger that the latter may not develop the moral character needed to manage their material inheritance well (the same danger that causes cyclical revolutions in the Polybian πόλις). In this context, there are several additional testimonia from the Democritean corpus that warrant (re)examination:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
(a <sub>2</sub> ) ἀνθρώποισι τῶν ἀναγκαίων δοκεῖ εἶναι παῖδας κτήσασθαι ἀπὸ φύσιος καὶ καταστάσιός τινος ἀρχαίης.	<p>People consider having children to be one of the necessities because of nature and a certain ancient institution. (<i>my translation</i>)</p> <p>Democritus, fr. 278 DK  = fr. D142 Taylor  = fr. 562 Luria</p> <p>Stob. 4.24.33</p>

<sup>117</sup> See e.g. fr. 646 Luria (wherein the atomist concludes that hard labor and/or suffering should be expended only for necessities), 717 Luria (where refusing to attend to necessities is called irrational), and 732 Luria (wherein the atomist recommends satisfying the absolute human need for sustenance and sleep with the most basic food and bed).

<p>(a<sub>3</sub>) Δημόκριτος δὲ γάμον καὶ παιδοποιίαν παραιτεῖται διὰ τὰς πολλὰς ἐξ αὐτῶν ἀηδίας τε καὶ ἀφορκὰς ἀπο τῶν ἀναγκαιοτέρων.</p>	<p>Democritus advised against marriage and having children as causing much unpleasantness and distraction from more essential things. (<i>Taylor</i>)</p> <p>Democritus, fr. A170 DK = fr. 191 Taylor = fr. 723 Luria</p> <p>Clem. <i>Strom.</i> 2.138</p>
<p>(b<sub>3</sub>) οὐ δοκεῖ μοι χρῆναι παῖδας κτᾶσθαι· ἐν ὁρῶ γὰρ ἐν παῖδων κτήσει πολλοὺς μὲν καὶ μεγάλους κινδύνους, πολλὰς δὲ λύπας, ὀλίγα δὲ τὰ εὐθηλέοντα καὶ ταῦτα λεπτά τε καὶ ἀσθενέα.</p>	<p>I do not think that one should have children; for in having children I see many great dangers and much distress, and few blessings and those meagre and weak. (<i>Taylor</i>)</p> <p>Democritus, fr. B276 DK = fr. D140 Taylor = fr. 722 Luria</p> <p>Stob. 4.24.31</p>
<p>(b<sub>4</sub>) ὅτεωι χρήμη τεὰ ἐστὶ παῖδα ποιήσασθαι, ἐκ τῶν φίλων τεύ μοι δοκεῖ ἄμεινον εἶναι. καὶ τῶι μὲν παῖς ἔστι τοιοῦτος, οἷον ἂν βούληται· ἔστι γὰρ ἐκλέξασθαι οἷον ἐθέλει· καὶ ὅς ἂν δοκῇ ἐπιτήδειος εἶναι, κἂν μάλιστα κατὰ φύσιν ἔποιτο. καὶ τοῦτο τοσοῦτον διαφέρει, ὅσον ἐνταῦθα μὲν ἔστι τὸν παῖδα λαβεῖν καταθύμιον ἐκ πολλῶν, οἷον ἂν δέη. ἣν δέ τις ποιῇται ἀπὸ ἐωυτοῦ, πολλοὶ ἔννεισι κίνδυνοι· ἀνάγκη γάρ, ὅς ἂν γένηται, τούτῳ χρῆσθαι.</p>	<p>If anyone needs to have a child, it seems to me better that he should choose from his friends' children. That way he will get the sort of child he wants, for he can choose the one he likes; and the one that seems suitable will follow his bidding as far as its nature allows. And this is a great difference, in that he can choose from many the one he prefers, according as he thinks it should be. But if he has one of his own, there are many dangers; for he has to make do with the one that is born to him. (<i>Taylor</i>)</p> <p>Democritus, fr. B277 DK = fr. D141 Taylor = fr. 724 Luria</p> <p>Stob. 4.24.32</p>



(c) τράπεζαν πολυτελέα μὲν τύχη παρατίθησιν, αὐταρκέα δὲ σωφροσύνη.	Fortune provides a lavish table, self-control a sufficient one. ( <i>Taylor</i> )  Democritus, fr. B210 DK = fr. D74 Taylor = fr. 759 Luria  Stob. 3.5.26
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From Democritus' perspective, getting children is habit that people appear to cultivate naturally (ἀπὸ φύσιος) as a necessity (one of the ἀναγκαῖα in  $a_2$ ). This natural habit is a potential source of great disaster: getting one's own children inherently distracts from τὰ ἀναγκαιότερα ( $a_3$ ), offering greater risk than reward, more opportunity for introducing weakness than for cultivating strength ( $b_3$ )<sup>118</sup>—just as in the narrative of Polybius, where circumstances inevitably distract sons from the essential habits that maintain the regime undergirding their fathers' power. It is worth noting here that much of the moral counsel preserved in the Democritean corpus (as extant) appears calculated to help humans avoid being distracted away from necessities (food, shelter, safety, and the commonweal to maintain these) by luxuries (excessive wealth, and the private ambition that desires it and/or envies others who possess it),<sup>119</sup> i.e. to prevent the same kind of moral catastrophe that Polybius identifies as being responsible for recurring social and political instability in

118 See also fr. 721 Luria: τεκνοτροφίη σφαλερόν· τὴν μὲν γὰρ ἐπιτυχίην ἀγῶνος μεστήν καὶ φροντίδος κέκτηται, τὴν δὲ ἀποτυχίην ἀνυπέρθετον ἐτέρῃ ὀδύνῃ (Stob. 4.24.29).

119 See e.g. fr. 595 Luria (wherein the most important civic virtue is avoiding φιλονικίη), 633 Luria (wherein citizens become ὁμόνοοι by sharing material goods generously with one another as they are able), 679 Luria (wherein φιλονικίη is denounced as mindless ignorance of one's own best interest), 713 Luria (wherein great achievements in the πόλεις are only possible because of ὁμονοίη), 732 Luria (wherein the sparest diet is recommended to satisfy legitimate human needs), 759 Luria (wherein lavish fortune is contrasted unfavorably with ascetic wisdom), and 776 Luria (wherein the human ψυχὴ is indicted for wasting the σῶμα with unnecessary and extravagant passions that lead to its untimely malaise and demise).

his πολιτειῶν ἀνακύκλωσις (6.9.10).

Thus, in b<sub>4</sub> above, Democritus encourages the man who must have children to adopt rather than get his own, allowing him to circumvent the accident of birth (the same accident that wreaks havoc with the Polybian πόλις when a son incapable of succeeding his father inherits). Rather than beget a son naturally and gamble on his acquiring the moral character necessary to take his father's place (as the rulers of each failed state do in the story of Polybius), accepting the surfeit or loss that historical accident delivers (in c), Democritus encourages readers to cultivate self-control (σωφροσύνη), taming the necessity of having descendants by taking measures to see that those descendants are morally qualified to inherit their father's place in society and keep its inherently mutable form (early atomist ῥυσμός) from deteriorating irreparably (as every πολιτεία does in the cycle described by Polybius). Confronting the same moral dilemma that faces Polybius, Democritus recommends a solution consistent with his view of human character, a view that embraces determinism (humans will get children) without making it absolute (the individual can choose which children he raises as heirs to his position in society: he does not have to pick his personal biological offspring).

Note that this position is consistent with the supple determinism discussed at length in chapter 2. In fr. 103 Luria,<sup>120</sup> human nature is determined by necessity (which puts like atoms with like in fr. 316 Luria<sup>121</sup>) such that every human being is invariably an animal (a temporary cloud of body-atoms and soul-atoms existing by the ingestion and

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<sup>120</sup> Quoted above on pages 125-126.

<sup>121</sup> Quoted above on page 127.

expulsion of atoms via processes like respiration), but certain of his characteristics—e.g. the number of his fingers and the location of his dwelling—remain subject to variation (which can be minimal, e.g. between eight and twelve fingers, or maximal, e.g. between one end of the habitable world and its polar opposite). Reading fr. 682 Luria<sup>122</sup> in this context, the shape (ῥυσμός) of the individual human being is invariably animal (in that it requires respiration and similar processes to survive), but not invariably ten-fingered (finger counts vary) or Abderite (geographical location varies). Often, the variable aspects of human shape are left to accident (e.g. the lucky coincidence that showed the first muleteers how to breed their beasts of burden<sup>123</sup>), which strikes us with atomic εἶδωλα that may be good or bad for the shape of our individual and collective bodies.<sup>124</sup> Instruction, on the other hand, gives us the opportunity to mould our variable shape (ῥυσμός) intentionally,<sup>125</sup> inducing it—through contact with specific atomic εἶδωλα—to evolve in desired ways (acquiring useful physical traits and moral habits that it might not get through accidental environmental stimulation). In this paradigm, the collective is like the individual.<sup>126</sup> As the invariable shape of an individual human being is animal, so the invariable shape of an individual human society is an animal collective—a group of animals drawn together by their mutual likeness (following the familiar physical and biological rule from fr. 316 Luria that like invariably congregates with like).<sup>127</sup> As nature

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122 Quoted above on page 223.

123 See the presentation of fr. 561 Luria on page 211 above.

124 See pages 227-239 above.

125 Note that it does not alter our invariable shape, which remains animal as long as we live, changing only when necessity dissolves the cloud of atoms that constitutes us as individuals and/or groups.

126 See note 110 above.

127 See also fr. 595, 713 Luria. Incidentally, the existence of a collective is also the only ubiquitous continuity in the account of Polybius, the only feature that all of his πολιτεῖαι share (whether we are

necessarily works to shape the individual with random atomic εἴδωλα that happen to strike it, so it works to shape society via random accident. As instructing the individual offers an alternative means of changing his shape (in fr. 682 Luria), so teaching a group offers an alternative means of changing its shape (as imagined in fr. 613 Luria, where the atomist wants to change the ῥυσμός of the Greek πόλις so that good rulers are not punished, or in fr. 561 Luria, where breeding mules becomes a habit of mankind rather than of just one man).

Returning to b<sub>4</sub> (fr. 724 Luria), we see Democritus advocating that human character (individual and/or collective) be moulded such that we cultivate child-rearing—a necessary part of our natural shape as animals (a<sub>2</sub>)—differently, with an eye toward minimizing the historical risks that both he and Polybius identify in leaving reproduction to untutored nature, which does not always shape us in ways conducive to our own best interest (as individuals or societies). We want stable people with regular shape to form stable societies with regular shape, but as Democritus says briefly<sup>128</sup> and Polybius illustrates at length, nature produces variations<sup>129</sup> that historically prove chaotic

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talking about primitive monarchy, advanced democracy, or any of the degenerate transitional states).  
 128 When he recognizes natural child-rearing as a source of ἀηδία (a<sub>3</sub>), ἀφολκαὶ ἀπὸ τῶν ἀναγκαιοτέρων (a<sub>3</sub>), λῦπαι (b<sub>3</sub>), and κίνδυνοι (b<sub>3</sub>, b<sub>4</sub>).

129 Note here the presence of books titled (i) Περὶ τῶν διαφερόντων ῥυσμῶν and (ii) Περὶ ἀμειψιρυσμιῶν among the physical works attributed to Democritus by Thrasyllus (fr. cxv Luria = Diog. 9.45-49). Since we already know that Democritus contemplated human beings as mutable ῥυσμοί, whether as individuals (fr. 682 Luria) or groups (fr. 613 Luria), it is obvious that he had ideas about (i) the different shapes of humanity and (ii) how those shapes change. Describing the evolution of human groups, Democritus might have developed these ideas into a recursive narrative like the one crafted by Polybius (who identifies all the different political shapes possible in human social experience and then shows how they change into one another continually over time via natural processes like those familiar to the Critical Tradition). While it lacks conclusive support, this idea is not far-fetched: remember that the doxographical tradition has the early atomists describing κόσμοι as being born, growing, decaying, and dying to provide the raw materials for new worlds (see fr. 300 and 349 Luria)—i.e. composing an evolutionary history for the physical universe very like Polybius' evolutionary history of the human

(deforming and destroying the individuals and societies unfortunate enough to experience them). For Democritus, this is where instruction intervenes, offering students a way to reform natural human ῥυσμός so that it avoids harmful deformation that is unnecessary (i.e. harmful deformation that is not built into its invariable animal shape, which demands the death and dissolution of the animal or group of animals that possess it without determining precisely when or how these harmful deformations occur). Democritus advises that people prefer rational adoption to irrational begetting, taking advantage of the variability necessity allows here to choose the self-sufficient table of σωφροσύνη rather than the extravagant (πολυτελής) table of τύχη (c), where the rulers of Polybius inevitably sup to the ruin of their own shape and the shape of the collective they govern. It is surely significant that the atomist and the historian coincide so neatly here that Democritus appears to be offering (in more than one ethical fragment) a carefully conceived cure for the precise moral disease Polybius describes.

While none of the evidence points conclusively to Democritus being one of the unnamed others that Polybius cites as sources alongside Plato (6.5.1), it does indicate that Polybius' *Kulturgeschichte* has much to teach us about Democritus. It is possible (and given the number of close coincidences, even very likely) that the lost Democritean narrative(s) describing the origins and development of human culture looked much like the historical account of human political institutions provided by Polybius. Unique

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ethical universe (in which societies constantly arise, grow, decay, and die giving birth to new societies). Cole (1967) thinks that Polybius' history derives from Democritus, and discusses at length the likeness between Democritean physical κόσμος and communal ῥυσμός (which he finds reflected in Polybius) in his eight chapter (107-130), where he finds the atoms that make up the former analogous to the people who make up the latter. I endorse his arguments without relying on them for my work here, which stands on its own and does not need to make Polybius a direct heir of Democritus.

among the authors examined to this point, Polybius offers a *Kulturgeschichte* that the atomist might conceivably have written himself (though it omits or glosses over crucial details, like humans acquiring culture directly from animals).<sup>130</sup> Unlike the earlier accounts examined, Polybius' offers both a narrative framework (the conception of human cultural evolution as an ongoing series of responses to impersonal αἰτίαι that recur in accordance with εἰκός) and concrete details—(i) fundamental human ἀσθένεια, (ii) δικαιοσύνη that evolves naturally from recurring circumstances, (iii) predictable human responses to material abundance (περιουσία)—that Democritus himself appears to have used in building his own *Kulturgeschichte*. Reading Polybius has allowed us to come up with a clearer idea of how the atomist might have anticipated the historian in crafting these elements into coherent narrative(s) deriving from an early atomist perspective (in which necessity determines all events laxly by sorting like with like). Like Polybius, Democritus appears to have imagined humanity evolving culture without divine intervention as a response to recurring circumstances, a natural response necessarily determined by human nature's fundamental weakness (the ἀσθένεια that makes human life fragile, brief, and disastrous in fr. 646 Luria) and strength (the plasticity that allows us to learn from impressions our environment makes in our souls, responding to the atomic εἶδωλα that we encounter by developing in ourselves new thoughts, new words, and new habits—i.e. new νόμοι that might become entrenched in our community and

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130 Cole (1967) ends up arguing that Polybius' account is Democritean (130), and my analysis supports his thesis (without depending on it or deriving from it: our respective investigations into the coincidences between Democritus and Polybius stand alone and deserve to be evaluated separately).

even change its shape as contemplated in fr. 613 Luria<sup>131</sup>). Reading the historian against the Critical thinker shows us how pieces of the original early atomist διάκοσμος scattered through the extant atomist corpus still cohere intelligently, even if the precise nature of their original coherence(s) remains obscure. Thus, while it is true that we do not know exactly what Democritus said in books like the Μικρὸς διάκοσμος, it is not true that we have no idea what he might have said—or that what idea we have shows no evidence for any relationship whatever between early atomist ethics and physics.<sup>132</sup>

Thus far, my research into the Critical Tradition shows (i) that Democritus was not out of step with his Critical peers in composing *Kulturgeschichte* grounded in a physical cosmogony (quite the contrary); (ii) that several chronological contemporaries of the atomist (e.g. Arcesilaus, Protagoras, and Plato) wrote *Kulturgeschichte* that agree broadly with the approach to cultural history evident in his fragments; and (iii) that later historians (e.g. Polybius) had access to accounts even more strikingly similar to what we find today in those fragments (accounts that might have included books like Democritus' Μικρὸς διάκοσμος). Even if the trail of early atomist *Kulturgeschichte* ended here, with Polybius as our clearest witness to the kind of origin and development story Democritus composed about human ethics, it would not be cold; but it goes on.

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131 Compare how the Polybian society evolves new laws every time it experiences a regime change, i.e. new ways of maintaining the social cohesion necessary to keep the πόλις together so that the individual citizens survive.

132 Remember Barnes (1982), who puts the wrong idea so neatly and succinctly: “[P]hysics and ethics were so successfully compartmentalized in Democritus' capacious mind that he never attended to the larger issues which their cohabitation produces” (535).

**(5) Diodorus Siculus, *Bibliotheca historica* 1.7-8.** Composing his universal history in the first century BCE, Diodorus offers a window onto ancient *Kulturgeschichte* even later (and thus further removed from early atomism) than that provided by Polybius. Still, certain aspects of Diodorus' narrative remind the reader pointedly of Democritus in ways that echo and go beyond what we have already seen in this chapter. While Polybius appears very close to Democritus as a cultural historian (as we have already seen above), he comes short of matching him perfectly in at least two important ways: (i) he never invokes material necessity (ἀνάγκη) as an important αἰτία (as we would expect an early atomist to do<sup>133</sup>); and (ii) he offers no clear idea of how animals might be responsible for teaching human beings culture (as in Democritus, fr. 559 and 561 Luria, quoted above on page 190). Diodorus' *Kulturgeschichte* offers something to supply at least the first of these deficiencies in Polybius, since the historian assigns the most prominent etiological role in his story to a materialist necessity that appears perfectly congruent with the early atomist necessity discussed above in chapter 2.

Like Polybius, Diodorus credits his account to unnamed predecessors whose work he epitomizes,<sup>134</sup> and he treats humankind as an animal species.<sup>135</sup> Unlike Polybius, he

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133 See chapter 2.2.1-2 above, and remember that according to Leucippus, nothing happens without necessity: οὐδὲν χρῆμα ματὴν γίνεται, ἀλλὰ πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης (fr. 22 Luria = Aet. 1.25.4; Stob. 1.4.7c). Leucippus' πάντα includes the evolution of human beings and their culture.

134 These sources clearly stand in the Critical Tradition. Their account of human evolution begins in typical Critical fashion (documented above in chapter 1) with the origin and development of the world (κόσμος) from primordial element(s): οἱ δὲ γεννητὸν καὶ φθαρτὸν εἶναι [sc. τὸν κόσμον] νομίσαντες ἔφησαν ὁμοίως ἐκείνῳ τοὺς ἀνθρώπους τυχεῖν τῆς πρώτης γενέσεως ὠρισμένοις χρόνοις. κατὰ γὰρ τὴν ἐξ ἀρχῆς τῶν ὅλων σύστασιν μίαν ἔχειν ἰδέαν οὐρανὸν τε καὶ γῆν, μεμιγμένης αὐτῶν τῆς φύσεως· μετὰ δὲ ταῦτα διαστάντων τῶν σωμάτων ἀπ' ἀλλήλων, τὸν μὲν κόσμον περιλαβεῖν ἅπασαν τὴν ὀρωμένην ἐν αὐτῷ σύνταξιν (1.6.3-1.7.1).

135 Diod. 1.7.3-7. Man is just another ἐπίγειον ζῷον born from the primeval earth as the sun dries it.



begins as a Critical thinker would, with a cosmogony<sup>136</sup> that incorporates zoogony. Like the zoogonies of Democritus<sup>137</sup> and Archelaus,<sup>138</sup> his finds the origin of life in primeval mud.<sup>139</sup> After emerging from this mud, Diodoran humanity evolves in familiar ways:

TEXT ( <i>Bertrac</i> )	TRANSLATION ( <i>Oldfather</i> )
<p>τοὺς δὲ ἐξ ἀρχῆς γεννηθέντας τῶν ἀνθρώπων φασὶν ἐν ἀτάκτῳ καὶ θηριώδει βίῳ καθεστῶτας σποράδην ἐπὶ τὰς νομάς ἐξιέναι, καὶ προσφέρεισθαι τῆς τε βοτάνης τὴν προσηνεστάτην καὶ τοὺς αὐτομάτους ἀπὸ τῶν δένδρων καρπούς. καὶ πολέμου-μένους μὲν ὑπὸ τῶν θηρίων ἀλλήλοις βοηθεῖν ὑπὸ τοῦ συμφέροντος διδασκομένους, ἀθροιζομένους δὲ διὰ τὸν φόβον ἐπιγινώσκειν ἐκ τοῦ κατὰ μικρὸν τοὺς ἀλλήλων τύπους. τῆς φωνῆς δ' ἀσήμου καὶ συγκεχυμένης ὑπαρχούσης ἐκ τοῦ κατ' ὀλίγον διαρθροῦν τὰς λέξεις, καὶ πρὸς ἀλλήλους τιθέντας σύμβολα περὶ ἐκάστου τῶν ὑποκειμένων γνώριμον σφίσιν αὐτοῖς ποιῆσαι τὴν περὶ πάντων ἑρμηνείαν. τοιούτων δὲ συστημάτων γινομένων καθ' ἅπασαν τὴν οἰκουμένην, οὐχ ὁμόφωνον πάντας ἔχειν τὴν διάλεκτον, ἐκάστων ὡς ἔτυχε συνταξάντων τὰς λέξεις· διὸ καὶ παντοίους τε ὑπάρξαι χαρακτῆρας διαλέκτων καὶ τὰ πρῶτα γενόμενα συστήματα τῶν ἀπάντων ἐθνῶν ἀρχέγονα γενέσθαι. τοὺς οὖν πρῶτους τῶν ἀνθρώπων μηδενὸς τῶν πρὸς βίον χρησίμων εὐρημένου ἐπιπόνως διάγειν, γυμνοὺς μὲν ἐσθῆτος ὄντας, οἰκίσεως δὲ καὶ πυρὸς ἀήθεις, τροφῆς δ' ἡμέρου παντελῶς ἀνεγνωήτους.</p>	<p>But the first men to be born, they say, led an undisciplined and bestial life, setting out one by one to secure their sustenance and taking for their food both the tenderest herbs and the fruits of wild trees. Then, since they were attacked by the wild beasts, they came to each other's aid, being instructed by expediency, and when gathered together in this way by reason of their fear, they gradually came to recognize their mutual characteristics. And though the sounds which they made were at first unintelligible and indistinct, yet gradually they came to give articulation to their speech, and by agreeing with one another upon symbols for each thing which presented itself to them, made known among themselves the significance which was to be attached to each term. But since groups of this kind arose over every part of the inhabited world, not all men had the same language, inasmuch as every group organized the elements of its speech by mere chance. This is the explanation of the present existence of every conceivable kind of language, and, furthermore, out of these first groups to be formed came all the original nations of the world. Now the first</p>

136 Note that this cosmogony generates the world by means of a vortex (δίνη in Diod. 1.7.1) that sorts heavy matter downwards (to create earth and animals) and lighter matter upwards (to create the heavens), echoing the early atomists (chapter 2 above) and Anaxagoras (chapter 1.3.6 above).

137 See the testimonia gathered in fr. 514 Luria, cited in full on page 146 above.

138 See page 193 above.

139 The sun-ripened soil membranes from which the first animals emerge derive from τὸ δὲ ἰλυῶδες καὶ θολερὸν μετὰ τῆς τῶν ὑγρῶν συγκρίσεως ... τὴν γῆν πηλώδη καὶ παντελῶς ἀπαλὴν (Diod. 1.7.2-3).

<p>καὶ γὰρ τὴν συγκομιδὴν τῆς ἀγρίας τροφῆς ἀγνοοῦντας μηδεμίαν τῶν καρπῶν εἰς τὰς ἐνδείας ποιεῖσθαι παράθεσιν· διὸ καὶ πολλοὺς αὐτῶν ἀπόλλυσθαι κατὰ τοὺς χειμῶνας διὰ τε τὸ ψῦχος καὶ τὴν σπάνιν τῆς τροφῆς. ἐκ δὲ τοῦ κατ' ὀλίγον ὑπὸ τῆς πείρας διδασκομένους εἰς τε τὰ σπήλαια καταφεύγειν ἐν τῷ χειμῶνι καὶ τῶν καρπῶν τοὺς φυλάττεσθαι δυναμένους ἀποτίθεσθαι. γνωσθέντος δὲ τοῦ πυρὸς καὶ τῶν ἄλλων τῶν χρησίμων κατὰ μικρὸν καὶ τὰς τέχνας ἐξευρεθῆναι καὶ τᾶλλα τὰ δυνάμενα τὸν κοινὸν βίον ὠφελεῖν. καθόλου γὰρ πάντων τὴν χρεῖαν αὐτὴν διδάσκαλον γενέσθαι τοῖς ἀνθρώποις, ὑφ-ηγουμένην οἰκείως τὴν ἐκάστου μάθησιν εὐφυεῖ ζώῳ καὶ συνεργοὺς ἔχοντι πρὸς ἅπαντα χεῖρας καὶ λόγον καὶ ψυχῆς ἀγχίνοιαν.</p>	<p>men, since none of the things useful for life had yet been discovered, led a wretched existence, having no clothing to cover them, knowing not the use of dwelling and fire, and also being totally ignorant of cultivated food. For since they were ignorant of the harvesting of the wild food, they laid by no store of its fruits against their needs; consequently large numbers of them perished in the winters because of the cold and lack of food. Little by little, however, experience taught them both to take to the caves in winter and to store such fruits as could be preserved. And when they had become acquainted with fire and other useful things, the arts also and whatever else is capable of furthering man's social life were gradually discovered. Indeed, speaking generally, in all things it was necessity itself that became man's teacher, supplying in appropriate fashion instruction in every matter to a creature which was well endowed by nature and had, as its assistants for every purpose, hands and speech and sagacity of mind.</p> <p>Diod. 1.8.1-9</p>
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Once again (as in the myth of Protagoras, the account of Polybius, and the Democritean fr. 646 and 595 Luria), humanity finds itself in a situation of acute physical weakness that the invention of society alleviates. The war between humanity and other animals, familiar to us from the myth of Protagoras,<sup>140</sup> reappears here as the initial impetus acting upon human weakness to create the first communities, but Diodorus is careful to specify that individual people only band together after they have observed the consequences of

<sup>140</sup> See Plato, *Protag.* 322b (quoted with context on page 197 above): ἀπώλλυντο οὖν ὑπὸ τῶν θηρίων διὰ τὸ πανταχῇ αὐτῶν ἀσθενέστεροι εἶναι ... ἐζήτουν δὴ ἀθροίζεσθαι καὶ σώζεσθαι κτίζοντες πόλεις.

fighting alone (καὶ πολεμουμένους μὲν ὑπὸ τῶν θηρίων ἀλλήλοις βοηθεῖν ὑπὸ τοῦ συμφέροντος διδασκομένους, ἀθροιζομένους δὲ διὰ τὸν φόβον). Thus, like Polybius' primitive humans,<sup>141</sup> those in Diodorus learn from their environment, becoming students of circumstantial necessity (ὑπὸ τοῦ συμφέροντος διδασκομένους) much as Democritus imagines men being opportunistic students of the animals (in fr. 559 and 561 Luria).

Once united in community, Diodorus' primitives continue their course of study (πάντων τὴν χρεῖαν αὐτὴν διδάσκαλον γενέσθαι τοῖς ἀνθρώποις), learning agriculture (among other things) from observing the recursive pattern of nature and cultivating habits that maximize benefits and minimize deficits to themselves within that pattern (καὶ γὰρ τὴν συγκομιδὴν τῆς ἀγρίας τροφῆς ἀγνοοῦντας ... ἐκ δὲ τοῦ κατ' ὀλίγον ὑπὸ τῆς πείρας διδασκομένους εἷς τε τὰ σπήλαια καταφεύγειν ἐν τῷ χειμῶνι καὶ τῶν καρπῶν τοὺς φυλάττεσθαι δυναμένους ἀποτίθεσθαι).<sup>142</sup> This is essentially the same approach to ethics that we have already seen Democritus adopting in fr. 562, 722-724, and 759 Luria.<sup>143</sup> In Diodorus as in Democritus, it exists explicitly within a world-order (διάκοσμος in the Critical Tradition) defined and determined by material necessity (τὸ συμφέρον and χρεῖα in Diodorus, ἀνάγκη and associated terms in Democritus). Consider the following early

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141 Recall how they learned justice and other moral values from observing others being mistreated. A slight difference between Polybius and Diodorus here is that the Sicilian gives more attention to the non-human elements of the primitive environment (e.g. in explaining the origin of agriculture, which requires people to notice that food can survive under certain conditions); this makes sense, since Polybius' focus on political culture is narrower than Diodorus' attempt to account for all culture.

142 In early atomist terms, the recursive pattern of nature in one place would be a κόσμος, within which human beings naturally come together to form ῥυθμοί. Both κόσμοι and ῥυθμοί evolve over time, changing shape as the atoms within them move about.

143 See the discussion on pages 236-252 above. According to fr. 759 Luria, prudence consists in learning to cultivate self-sufficiency (e.g. the food storage that Diodorus' primitives eventually learn to put by) as a replacement for whatever nature may provide (e.g. abundant food in summer, famine in winter).

atomist testimonia, some new and some already familiar from earlier discussions:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
(a) Λεύκιππος πάντα κατ' ἀνάγκην, τὴν δ' αὐτὴν ὑπάρχειν εἰμαρμένην. λέγει γὰρ ἐν τῷ Περὶ νοῦ· οὐδὲν χρῆμα ματὴν γίνεται, ἀλλὰ πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης.	Leucippo sostiene che tutto è in virtù della Necessità, e che quest'ultima è il destino. Infatti, nell'opera intitolata <i>Sull'Intelligenza</i> afferma: «nulla avviene invano, ma tutto deriva dalla causa e dalla necessità». ( <i>Luria, Krivushina</i> )  Leucippus, fr. B2 DK = fr. L1 Taylor = fr. 22 Luria  Aet. 1.25.4; Stob. 1.4.7c
(b) «καὶ γὰρ ζῶια, φησὶν, ὁμογενέσι ζώοις συναγελάζεται ὡς περιστραὶ περιστραῖς καὶ γέρανοι γεράνοις καὶ ἐπὶ τῶν ἄλλων ἀλόγων ὡσαύτως. <ὡσαύτως> δὲ καὶ ἐπὶ τῶν ἀψύχων ... »	For “Animals flock together,” [Democritus] says, “with animals of the same kind, doves with doves and cranes with cranes and similarly with the other irrational creatures, and so with non-living things too ...” ( <i>Taylor</i> )  Democritus, fr. B164 DK = fr. D6 Taylor = fr. 316 Luria  Sext. <i>Adv. Math.</i> 7.116
(c) γινώσκειν χρεῶν ἀνθρωπίνην βιοτὴν ἀφαυρὴν τε ἐοῦσαν καὶ ὀλιγοχρόνιον ... ὅπως ἂν τις μετρίης τε κτήσιος ἐπιμέληται καὶ μετρήται ἐπὶ τοῖς ἀναγκαίοις ἢ ταλαιπωρίῃ.	Bisogna prendere consapevolezza della fragilità e della brevità della vita umana ... in modo da curarsi di avere beni di proprietà misurati e da commisurare le tribolazioni inevitabili alle necessità vitali. ( <i>Luria, Krivushina</i> )  Democritus, fr. B285 DK = fr. D150 Taylor = fr. 646 Luria  Stob. 4.34.65

(d) ἀλογιστή μὴ συγχωρέειν ταῖσι κατὰ τὸν βίον ἀνάγκαις.	<p>Not making way for the necessities of life is a lack of calculation. (<i>my translation</i>)</p> <p>Democritus, fr. B289 DK  = fr. D154 Taylor  = fr. 717 Luria</p> <p>Stob. 4.44.64</p>
(e) ἐπιρυσμὴ ἐκάστοισιν ἡ δόξις.	<p>Opinion is for everyone a reshaping. (<i>Bett</i>)</p> <p>Democritus, fr. B7 DK  = fr. D20, 179a Taylor  = fr. 49 Luria</p> <p>Sext. <i>Adv. math.</i> 7.137</p>
(f) ὄρος συμφόρων καὶ ἀσυμφόρων τέρψις καὶ ἀτερπία.	<p>Pleasure and lack of pleasure mark the boundary between what is profitable and what is not. (<i>my translation</i>)</p> <p>Democritus, fr. B188 DK  = fr. D26 Taylor  = fr. 734 Luria</p> <p>Stob. 3.1.46</p>
(g) ἡ φύσις καὶ ἡ διδασχὴ παραπλήσιόν ἐστι. καὶ γὰρ ἡ διδασχὴ μεταρυσμοῖ τὸν ἄνθρωπον, μεταρυσμοῦσα δὲ φυσιοποιεῖ	<p>Nature and teaching are similar, for teaching reshapes the man, and in reshaping makes his nature. (<i>Taylor</i>)</p> <p>Democritus, fr. B33 DK  = fr. D28 Taylor  = fr. 682 Luria</p> <p>Clem. <i>Strom.</i> 4.151; Stob. 2.31.65; Theodore. 4.1, p. 100 Räder</p>

<p>(h) κατ' αὐτὸν (Δημόκριτον) ... εἶναι κριτήρια ... αἰρέσεως δὲ καὶ φυγῆς τὰ πάθη· τὸ μὲν γὰρ ᾧ προσοικειούμεθα, τοῦτο αἰρετόν ἐστιν, τὸ δὲ ᾧ προσαλλοτριούμεθα, τοῦτο φευκτόν ἐστιν.</p>	<p>According to him (i.e. Democritus), our experiences are means for judging whether to choose something or avoid it. The thing that we associate with regularly must be chosen, while the thing from which we withdraw ourselves must be avoided. (<i>my translation</i>)</p> <p>Democritus, fr. A111 DK = fr. 734 Luria</p> <p>Sext. <i>Adv. math.</i> 7.140</p>
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Summarizing our understanding of these fragments provides a neat illustration of how the Diodoran perspective on human culture converges with the Democritean. Fragment (a) reminds us that everything in the early atomist multiverse occurs by necessity (οὐδὲν χρῆμα ματὴν γίνεται, ἀλλὰ πάντα ἐκ λόγου τε καὶ ὑπ' ἀνάγκης). Fragment (b) provides an illustration of what necessity does to constitute order: it sorts like particles with like (whether atoms of a kind or atomic clouds of a kind). As a result of this sorting process, worlds come into being—worlds populated by different species of animals, including human beings. As temporary configurations of atoms, worlds and the animals (including humans) within them are mortal: human life in particular is precarious (c), subject to sudden death when certain conditions are not met (e.g. when a person cannot breathe any more, when a person cannot find food, or when a person receives a mortal wound). These conditions mean that certain things become necessities for mankind (e.g. air for respiration, food for digestion, physical integrity for good health), things that mankind cannot afford to ignore (d) if it wants to survive (i.e. avoid cutting its mortal life short unnecessarily: eventually, all men must die).

Because of their physical constitution, which exists as a product of necessity, humans are equipped with an innate ability to notice and respond to their environment, forming opinions (e) from their impressions of it, opinions that drive them away from certain things (atomic clouds in particular shapes) and toward others: generally speaking, the things that they need are pleasant (e.g. good air, good food, and physical health), while the things that they do not need (e.g. bad air, bad food, and physical disease) are not (f). Men can deliberately cultivate this aptitude for distinguishing the needful from the dangerous, augmenting by instruction the natural endowment bestowed upon them by material necessity (g). As necessity puts like particles with like (b), so (h) Sextus has Democritus observing that man gravitates toward things (atomic clouds in particular shapes) like himself, things to which he has grown accustomed (i.e. air that he is used to breathing a certain way, food that he is used to eating a certain way, or physical health that he is used to enjoying in a certain shape), and away from things unlike himself, things to which he is not used (e.g. strange air, strange food, or unusual human shapes that do not match his impression of physical health). Assuming that this witness is genuine (as we have no reason not to), Democritus seems to be saying that people learn from atomist ἀνάγκη in the present just as Diodorus imagines their ancestors learning from τὸ συμφέρον and χρεῖα in the past, when human observation and instruction (facilitated by the invention of language) created and perpetuated τέχναι (e.g. agriculture) that minister to necessary human needs and insure human life against natural disasters (e.g. famine in winter).

It is important to notice that the likeness between Democritean necessity and Diodoran want is not merely rhetorical. Each concept arises as the humanly relevant expression of a materialistic reality embodied in a Critical cosmogony. For Diodorus as for Democritus, material reality (φύσις) in the form of a cosmogonic δίνη creates the world, forming human beings as animals at once mortal and moral. In the διάκοσμος imagined by either Critical thinker, human existence appears absolutely bounded by death (*all men must die*) and habit (*all men must have habits, including some that are absolutely essential if the individual wants to postpone unnecessary death*): note that both thinkers see a clear distinction existing between some human habits that are necessary<sup>144</sup> and others that are not.<sup>145</sup> Habit is mutable for either, as long as the needs essential for human survival are served.<sup>146</sup> The coincidence here is strong, with two concepts of material necessity (early atomist ἀνάγκη and Diodoran χρεία) mediating two functionally identical conceptions of human morality as inherently fixed (where necessity makes it invariably mortal) and flexible (where necessity does not predetermine the issue of its

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144 In Democritus, these habits are the ones that serve ἀνάγκαι (fr. 717 Luria) and τὰ ἀναγκαῖα (fr. 568, 646 Luria) or ἀναγκαϊότερα (fr. 723 Luria). In Diodorus, these habits are τὰ πρὸς βίον χρήσιμα that minister to essential human needs for shelter and food (1.8.5-7).

145 In Democritus, these habits are the ones that arise ἐκ τοῦ περιεῦντος ἥδη, like music (fr. 568 Luria). In Diodorus, they are the arts that help the city (τᾶλλα τὰ δυνάμενα τὸν κοινὸν βίον ὠφελεῖσαι) once the truly essential arts (τὰ πρὸς βίον χρήσιμα) have established it (1.8.7).

146 Witness Democritus' proposals to alter the widespread human habit of getting and raising one's own children (fr. 562, 722-724 Luria) as well as the Greek habit of subjecting just magistrates to unjust scrutiny after the completion of their term in office (fr. 613 Luria). Witness how separate languages develop in Diodorus. As isolated communities accidentally attribute meaning to different sounds over time, different languages necessarily take shape (1.8.3-4). All the Diodoran communities develop language as an essential human habit, but the particular form that every individual language takes is plastic, evolving randomly (ὡς ἔτυχε) and gradually (κατ' ὀλίγον in 1.8.3) over time—just like the other human arts, both essential and ancillary, which develop historically ἐκ δὲ τοῦ κατ' ὀλίγον in 1.8.7. Diodorus thus conceives human culture the same way Democritus does, as something inherently flexible and adaptive within the broad parameters laid down by material necessity.



mortality minutely or precisely). If Diodorus does not owe anything in his account directly to Democritus, he at least comes from a Critical perspective very close to the atomist, so close that Democritus' remark about music fits neatly into the Sicilian's *Kulturgeschichte* (with music arising as one of the arts that benefits the city without being necessary for its survival).<sup>147</sup> Diodorus' discussion of human language (1.8.3-4 above) provides further corroboration (of the likeness between early atomist ἀνάγκη and the Sicilian's χρεία), coinciding neatly with the developed linguistic perspective attributed to Democritus by Proclus in fr. 563 Luria.<sup>148</sup>

In this fragment, Proclus notes that several authorities (including the later atomist Epicurus) construe human language as an expression of reality whose historical forms are not arbitrary (οὐκ ἄρα, φησὶ Πυθαγόρας, τοῦ τυχόντος ἐστὶ τὸ ὀνοματουργεῖν, ἀλλὰ τοῦ τὸν νοῦν ὀρώντος καὶ τὴν φύσιν τῶν ὄντων· φύσει ἄρα τὰ ὀνόματα). In contrast with

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147 Compare fr. 568 Luria with Diodorus 1.8.7. While Polybius comes very close to Democritus, the conception of necessary and unnecessary habits in Diodorus is one important factor making his *Kulturgeschichte* closer than the Polybian to extant remains of early atomist *Kulturgeschichte*. Speaking generally, it is accurate to say that the perspective on human culture that we see darkly in Democritus' fragments looks similar to the clearer perspective offered by Polybius and very similar to the one preserved by Diodorus.

148 ὅτι τῆς Κρατύλου δόξης γέγονε Πυθαγόρας τε καὶ Ἐπίκουρος, Δημόκριτος δὲ καὶ Ἀριστοτέλης τῆς Ἑρμογένους ... διὰ δὲ τοῦ θεμένου τὰ ὀνόματα τὴν ψυχὴν ἠνίττετο (Πυθαγόρας), ἥτις ἀπὸ νοῦ ὑπέστη· καὶ αὐτὰ μὲν τὰ πράγματα οὐκ ἔστιν ὥσπερ ὁ νοῦς πρῶτως, ἔχει δ' αὐτῶν εἰκόνας καὶ λόγους οὐσιώδεις διεξοδικοὺς οἷον ἀγάλματα τῶν ὄντων ὥσπερ τὰ ὀνόματα ἀπομιμούμενα τὰ νοερά εἶδη, τοὺς ἀριθμούς· τὸ μὲν οὖν εἶναι πᾶσιν ἀπὸ νοῦ τοῦ ἑαυτὸν γινώσκοντος καὶ σοφοῦ, τὸ δ' ὀνομάζεσθαι ἀπὸ ψυχῆς τῆς νοῦν μιμουμένης. οὐκ ἄρα, φησὶ Πυθαγόρας, τοῦ τυχόντος ἐστὶ τὸ ὀνοματουργεῖν, ἀλλὰ τοῦ τὸν νοῦν ὀρώντος καὶ τὴν φύσιν τῶν ὄντων· φύσει ἄρα τὰ ὀνόματα. ὁ δὲ Δημόκριτος θέσει λέγων τὰ ὀνόματα διὰ τεσσάρων ἐπιχειρημάτων τοῦτο κατεσκεύαζεν· ἐκ τῆς ὁμωνυμίας· τὰ γὰρ διάφορα πράγματα τῷ αὐτῷ καλοῦνται ὀνόματι· οὐκ ἄρα φύσει τὸ ὄνομα· καὶ ἐκ τῆς πολωνυμίας· εἰ γὰρ τὰ διάφορα ὀνόματα ἐπὶ τὸ αὐτὸ καὶ ἓν πρᾶγμα ἐφαρμόσουσιν, καὶ ἐπάλληλα, ὅπερ ἀδύνατον· τρίτον ἐκ τῆς τῶν ὀνομάτων μεταθέσεως, διὰ τί γὰρ τὸν Ἀριστοκλέα μὲν Πλάτωνα, τὸν δὲ Τύρταμον Θεόφραστον μετωνομάσαμεν, εἰ φύσει τὰ ὀνόματα; ἐκ δὲ τῆς τῶν ὁμοίων ἐλλείψεως διὰ τί ἀπὸ μὲν τῆς φρονήσεως λέγομεν φρονεῖν, ἀπὸ δὲ τῆς δικαιοσύνης οὐκέτι παρονομάζομεν; τύχηι ἄρα καὶ οὐ φύσει τὰ ὀνόματα. καλεῖ δὲ ὁ αὐτὸς τὸ μὲν πρῶτον ἐπιχείρημα πολύσημον, τὸ δὲ δεύτερον ἰσόρροπον, τὸ δὲ τρίτον μετώνυμον, τὸ δὲ τέταρτον νώνυμον (Procl. in Crat. 16 p. 5, 25 Pasquali, cited below).

this position, Democritus sees the connection between reality (atoms and void) and language as an arbitrary one,<sup>149</sup> with the association between historical forms of language and particular phenomena occurring by accident (τύχηι ἄρα καὶ οὐ φύσει τὰ ὀνόματα). Where Epicurus would see a necessary connection between the word ἄνθρωπος in Greek and human nature in the world (such that one inherently implies the other in some way), Democritus would say that the relationship between the word and its referent is purely accidental: the Greek word for *human* might just as well be something else (as occurs in different languages), and even in Greek ἄνθρωπος might refer to something other than *human being*. Democritus offers four proofs for his position:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
ὁ δὲ Δημόκριτος θέσει λέγων τὰ ὀνόματα διὰ τεσσάρων ἐπιχειρημάτων τοῦτο κατεσκεύαζεν· ἐκ τῆς ὁμωνυμίας· τὰ γὰρ διάφορα πράγματα τῷ αὐτῷ καλοῦνται ὀνόματι· οὐκ ἄρα φύσει τὸ ὄνομα· καὶ ἐκ τῆς πολωνυμίας· εἰ γὰρ τὰ διάφορα ὀνόματα ἐπὶ τὸ αὐτὸ καὶ ἓν πρᾶγμα ἐφαρμόσουσιν, καὶ ἐπάλληλα, ὅπερ ἀδύνατον· τρίτον ἐκ τῆς τῶν ὀνομάτων μεταθέσεως· διὰ τί γὰρ τὸν Ἀριστοκλέα μὲν Πλάτωνα, τὸν δὲ Τύρταμον Θεόφραστον μετωνομάσαμεν, εἰ φύσει τὰ ὀνόματα; ἐκ δὲ τῆς τῶν ὁμοίων ἐλλείψεως· διὰ τί ἀπὸ μὲν τῆς φρονήσεως λέγομεν φρονεῖν, ἀπὸ δὲ τῆς δικαιοσύνης οὐκέτι παρονομάζομεν; τύχηι ἄρα καὶ οὐ φύσει τὰ ὀνόματα. καλεῖ δὲ ὁ αὐτὸς τὸ μὲν πρῶτον ἐπιχείρημα πολύσημον, τὸ δὲ δεύτερον ἰσόρροπον, τὸ δὲ τρίτον μετώνυμον, τὸ δὲ	Democritus supported his view that names belong to things by convention by four arguments. First, that from homonymy: different things are called by the same name, so the name does not belong to them by nature. Then, that from polyonymy: if different names fit one and the same thing, they must fit one another, which is impossible. Third, that from change of names: why was Aristocles' name changed to Plato, and Tyrtamus' to Theophrastus, if names apply by nature? Then, that from absence of similar terms: why do we form the verb 'think' from 'thought,' but do not form any verb from 'justice'? Names, therefore, apply by chance, not by nature. He himself calls the first argument 'the ambiguous,' the second 'the equivalent,' <the third 'the name-changing'>, and the

149 This position follows naturally from the Democritean doctrine that ἀρχὰς εἶναι τῶν ὄλων ἀτόμους καὶ κενόν, τὰ δ' ἄλλα πάντα νενομίσθαι (Diog. 9.44 = DK68A1). Like taste, temperature, and color, language exists in the realm of accidental convention (the νόμος invoked in fr. 55 Luria).

τέταρτον νώνυμον.	fourth 'the anonymous.'  Democritus, fr. B26 DK = fr. 167 Taylor = fr. 563 Luria  Procl. <i>in Crat.</i> 16 p. 5, 25 Pasquali
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Democritus' proofs are all empirical, arising from historical observations. The atomist sees human language existing such that (i) the same phenomenon can be designated by different words (e.g. the same human being might be referred to by the words *παῖς*, *ἄνθρωπος*, or *ἄνθρωπος*); (ii) if the connection between word and referent were inherent, then words like *παῖς*, *ἄνθρωπος*, and *ἄνθρωπος* would all be obvious equivalents, as they are not; (iii) name-changes do not correspond to fundamental changes in nature (i.e. Aristocles did not become a fundamentally different person when he acquired the nickname Plato); (iv) finally, the atomist observes that language does not work regularly (e.g. deriving verbs from nouns the same way in every case). All these observations presume a careful historical investigation of language by Democritus, with accident somehow responsible for the historical associations we observe between words and their referents (*τύχηι ἄρα καὶ οὐ φύσει τὰ ὀνόματα*). This is where Diodorus' discussion of the origins of human languages becomes interesting.

We know that Democritus told stories making accident responsible for historical phenomena (e.g. the invention of the mule in fr. 561 Luria). We know that Diodorus preserves a narrative making accident responsible for the historical phenomenon of human languages (quoted again here for ease of reference):

TEXT ( <i>Bertrac</i> )	TRANSLATION ( <i>Oldfather</i> )
τῆς φωνῆς δ' ἀσήμου καὶ συγκεχυμένης ὑπαρχούσης ἐκ τοῦ κατ' ὀλίγον διαρθροῦν τὰς λέξεις, καὶ πρὸς ἀλλήλους τιθέντας σύμβολα περὶ ἐκάστου τῶν ὑποκειμένων γνώριμον σφίσιν αὐτοῖς ποιῆσαι τὴν περὶ πάντων ἐρμηνείαν. τοιούτων δὲ συστημάτων γινομένων καθ' ἅπασαν τὴν οἰκουμένην, οὐχ ὁμόφωνον πάντας ἔχειν τὴν διάλεκτον, ἐκάστων ὡς ἔτυχε συνταξάντων τὰς λέξεις διὸ καὶ παντοίους τε ὑπάρξαι χαρακτηῖρας διαλέκτων καὶ τὰ πρῶτα γενόμενα συστήματα τῶν πάντων ἔθνων ἀρχέγονα γενέσθαι.	And though the sounds which they made were at first unintelligible and indistinct, yet gradually they came to give articulation to their speech, and by agreeing with one another upon symbols for each thing which presented itself to them, made known among themselves the significance which was to be attached to each term. But since groups of this kind arose over every part of the inhabited world, not all men had the same language, inasmuch as every group organized the elements of its speech by mere chance. This is the explanation of the present existence of every conceivable kind of language, and, furthermore, out of these first groups to be formed came all the original nations of the world.
	Diod. 1.8.3-4

Diodorus' account shows necessary awareness of the historical features of language to which Democritus draws attention in his proofs. For Diodorus, human language begins everywhere as meaningless undifferentiated sound (τῆς φωνῆς δ' ἀσήμου καὶ συγκεχυμένης ὑπαρχούσης), which particular communities separate differently, forming discrete words and languages as accident directs (ἐκάστων ὡς ἔτυχε συνταξάντων τὰς λέξεις). Every community is familiar with the natural phenomenon of humanity, but there is no regular rhyme or reason to the word(s) they create to refer to this constant reality: some invent one word (e.g. Greek ἄνθρωπος), and others another (e.g. Latin *homo*). In this narrative, the relationship between words and their referents is fundamentally arbitrary (exactly as in Democritus). Given what we know about Democritus—viz. that he wrote a

Critical *Kulturgeschichte* driven by humanity's ability to learn from accidents that occur in keeping with necessity (fr. 559, 561, 568 Luria) and had a well developed historical perspective on human language (fr. 563 Luria)—it appears very likely that the atomist composed an account of the origins and development of human language(s) and that that account was very like the one given by Diodorus.

The close coincidence between Democritus and Diodorus, closer even than the coincidence between the atomist and Polybius, raises questions. Given Diodorus' own admissions,<sup>150</sup> it is no surprise that modern scholarship treats his work as derivative, owing a significant part of its material to earlier sources whom he epitomizes and integrates with one another. In the case of the *Kulturgeschichte* under discussion here, some scholars have traced it back to Democritus directly, through Hecataeus of Abdera (fl. 4th century BCE), whose history of Egypt appears to have been an important source for Diodorus. This position was taken first by Reinhardt (1912), who was followed by Uxkull-Gyllenband (1924), Diels and Kranz (1952), and Cole (1967). Spoerri (1959) contests it vigorously, noting that Diodorus' account shows significant resonance with other (non-atomist, non-Abderite) sources contemporary and earlier.<sup>151</sup> From the

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150 Like the one cited in note 134 above. In the case of the cosmogony and *Kulturgeschichte*, there are significant textual clues corroborating that Diodorus himself is not responsible for all the ideas or their expression. For a precise account of this evidence, see Cole (1967), 174-192.

151 Remember that the cosmogony in Diodorus also resembles that of Anaxagoras quite closely (more in that atoms and void are never explicitly invoked by the Sicilian). Anaxagoras also appears to have made an explicit connection between human intelligence and hands (Aristot. *De part. animal.* 4.10. 687a7), reminding us of Diod. 1.8.9. There is no compelling reason to prefer Democritus over Anaxagoras as Diodorus' source, and the Clazomenian is not the only other source possible: other candidates include our friend Archelaus (cited above in this chapter) or an early (ca. 440-350 BCE) author in the Hippocratic tradition (*De prisca medic.* 3 = *Corp. medic. Gr.* 1.1, p. 38). The latter possibility is especially intriguing owing to the resonance that Democritus finds in the Hippocratic corpus (resonance which we will explore in the following chapter).

perspective of this study, establishing the precise genealogy of Diodorus' narrative is not necessary. It is enough to observe that it comes from the Critical Tradition and resonates significantly with extant fragments of Democritus, allowing us to imagine better how the early atomist *Kulturgeschichte* would have looked.

Even if the story of human cultural evolution in Diodorus is not directly from Democritus (as it may be), it still comes from a perspective very close to his.<sup>152</sup> Both the historian and the atomist imagine mankind growing up as children of nature—an animal species that responds to its environment by developing some habits that are necessary (the ones that preserve life) and others that are not (the ones that adorn it). The development of these habits occurs over time as accident (e.g. seeing an ass impregnate a mare, uttering sounds while trying to communicate) inspires innovation (mule-breeding, language) in an indefinite loop whose progression is well summed up in the dictum of Democritus: ἡ φύσις καὶ ἡ διδασχὴ παραπλήσιόν ἐστι. καὶ γὰρ ἡ διδασχὴ μεταρυσμοῖ τὸν ἄνθρωπον, μεταρυσμοῦσα δὲ φυσιοποιεῖ (fr. 682 Luria).<sup>153</sup> Nature creates man (as atoms and void come together of necessity), and man creates nature (as learning alters the shape of his atomic cloud and other clouds around it<sup>154</sup>). What better teacher of *physiopoiesis*

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152 This reading of Diodorus' *Kulturgeschichte* seems like the one Cole wishes he had made in the late afterword (pub. 1990) to his study. Recognizing and documenting the Critical Tradition allows me to make it more easily than Cole could, since his work does not offer a clear concept of the Critical Tradition (especially as it exists prior to Democritus). I do not say this to disparage his work, which is undeniably excellent, only to show where I have learned from it and improved upon it.

153 An even better Democritean summary of the historical perspective that Diodorus represents occurs in an Arabic version of Galen (cited here in Walzer's translation): "For as Democritus says, experience and vicissitudes have taught men this, and it is from their wealth of experience that men have learned to perform things as they do" (*De medica exper.* 9.5 p. 145b = Kitāb Gālīnūs fi-t-tagriba at-tibbija, ed. R. Walzer, 19.99 = Democritus, fr. B5 DK, fr. 558 Luria). There is no reason to doubt the fidelity of the Arabic tradition, which squares perfectly with other testimonia in this instance and is generally as likely to preserve Democritus accurately as John Stobaeus: see Rodríguez Adrados (2001), 94-104.

154 Learning to breed mules changes both the thoughts inside human minds (an atomic evolution for

could man find than nature herself, the physical necessity that made him and all the world around him (as in Diodorus 1.8.8-9)? How would nature teach man? Might she not reach him through the behavior of other animals, the same ones that are mankind's first tutors in the civilized arts according to Democritus (fr. 559 Luria)? The likeness between Democritus and Diodorus here (in these matters of fundamental importance to both) is striking and pervasive, even if Spoerri (1959) is right to recognize that the historian need not be drawing solely or uniquely upon the published work of the atomist.<sup>155</sup>

**(6) Lucretius, *De rerum natura* 5.925-1457.** The final example of *Kulturgeschichte* under review in this chapter comes from Titus Lucretius Carus (first century BCE), the mysterious Latin poet<sup>156</sup> whose versified summary of Epicureanism remains our most extensive continuous treatment of ancient atomism extant. While Epicurus is the primary source for this account,<sup>157</sup> we find ample evidence (both throughout the poem and in the *Kulturgeschichte*) to confirm the judgment of Cicero that Democritus was *vir magnus in primis cuius fontibus Epicurus hortulos suos inrigavit* (*De nat. deor.* 1.43.120 = Democritus, fr. xcvi Luria, fr. 172c Taylor, fr. A74 DK).

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Democritus) and physical realities in the human environment (more atomic evolutions), which eventually includes many more mules, with everything that entails in terms of the work that these animals facilitate, the resources that their upkeep requires, and any other consequences that their continual proximity to human beings may occasion.

155 The good sense of Spoerri's position only increases when we consider (1) that Diodorus himself makes the source of his *Kulturgeschichte* an indefinite plurality (see note 134 again) and (2) that he elsewhere (1.39 = fr. 411 Luria) does not hesitate to cite Democritus explicitly when he draws upon him uniquely (to explain the seasonal flooding of the Nile).

156 Mysterious because we know so little about his life and/or the historical context for his work.

157 See Lucr. 2.292-293, 3.1-30, 3.1042-1044, 5.55-56, and Clay (1983), 13-53. Accepting the primacy of Epicurus as Lucretius' inspiration, Clay nevertheless recognizes other sources, especially Empedocles, whom the Latin poet cites by name with approval (e.g. in 1.716-733). Lucretius treats Democritus in similar fashion, making the early atomist responsible for doctrines (3.370-373, 5.620-624) and an ethical *exemplum* (3.1039-1041) that resonate well with the more modern message of Epicurus.

The fifth book of Lucretius' poem provides an Epicurean version of the Critical narrative of origin and development that we have already become familiar with: it opens with an atomist cosmogony (5.91-770), which gives rise to zoogony and anthropogony (5.772-924), and concludes with an extensive atomist *Kulturgeschichte* (5.925-1457). Like the Democritean κόσμος, the Lucretian *mundus* arises from atoms (*multa primordia rerum* in 5.187; *corpora* in 5.355 *et passim*) clashing in the void (*inane* in 5.355 *et passim*). Engaged in an endless conflict characterized by aimless collision,<sup>158</sup> some of Lucretius' atoms inevitably form a localized *tempestas molesque* (5.436) in which they are sorted spontaneously according to a natural pattern familiar from chapter 2:

TEXT (Bailey)	TRANSLATION (Bailey)
<i>diffugere inde loci partes coepere paresque / cum paribus iungi res et discludere mundum / membraque dividere et magnas disponere partis, / hoc est, a terris altum secernere caelum, / et sorsum mare, uti secreto umore pateret, / sorsus item puri secretique aetheris ignes.</i>	From this mass [the primeval <i>tempestas</i> or <i>moles</i> in 5.436] parts began to fly off hither and thither, and like things to unite with like, and so to unfold a world, and to sunder its members and dispose its great parts, that is, to mark off the high heaven from the earth, and the sea by itself, so that it might spread out with its moisture kept apart, and likewise the fires of the sky by themselves, unmixed and kept apart.  Lucr. 5.443-448

<sup>158</sup> Lucretius summarizes the atomist theory of cosmogony by accidental atomic collisions early in the book: *namque ita multa modis multis primordia rerum / ex infinito iam tempore percita plagis / ponderibusque suis consuerunt concita ferri / omnimodisque coire atque omnia pertemptare, / quaecumque inter se possent congressa creare, / ut non sit mirum si in talis disposituras / deciderunt quoque in talis venere meatus, / qualibus haec rerum geritur nunc summa novando* (5.187-194). He characterizes the endless clash of atoms as a war later: *inter se cum maxima mundi / pugnent membra, pio nequaquam concita bello* (5.380-381). There is no question of an almighty Anaxagorean mind or Xenophanean god guiding this process intelligently: *nam certe neque consilio primordia rerum / ordine se suo quaeque sagaci mente locarunt / nec quos quaeque darent motus pepigere profecto, / sed quia multa modis multis primordia rerum / ex infinito iam tempore percita plagis / ponderibusque suis consuerunt concita ferri / omnimodisque coire atque omnia pertemptare* (5.419-425). Compare this with chapter 2, and you will find the Epicurean poet very close to Democritus (and Leucippus).



Like parts go with like, resolving the initial chaos of the *tempestas* into the regular *turbo* (5.624) of the familiar, ordered *mundus* (with heavy, earthy particles at the bottom and lighter particles revolving above in the atmosphere and heavens). This is recognizably the same cosmogony as the early atomist one in chapter 2, where like particles go with like in the δίνη that creates our world.<sup>159</sup> The only difference is the *clinamen* (Epicurus' παρέγκλισις),<sup>160</sup> the random atomic swerve that does not even appear explicitly here.<sup>161</sup>

159 Remember the Democritean fr. DK68B164 (= fr. 316 Luria) and B167 (= fr. 288 Luria), where necessity is the vortex (δίνη, δῖνος) that creates the world by sorting like with like («ὥς ἂν συναγωγὸν τι ἔχουσης τῶν πραγμάτων τῆς ἐν τούτοις ὁμοιότητος» in fr. 316 Luria, quoted on pages 127-138 above, with extensive discussion following). See note 34 in chapter 2.

160 In truth, we do not know precisely what Epicurus called the swerve. Diogenes of Oenoanda refers to the swerve as a παρεγκλιτική κείνησις (fr. 54, col. 3, no. 6 Smith). Aetius uses the more abbreviated παρέγκλισις (1.12.5, 311.15 Diels), which modern scholarship has transferred tentatively to Epicurus as the Epicurean Greek word most likely to be translated as *clinamen*. See Epicurus, fr. 280-281 Usener, Bailey (1926, 184-185, 216, 339-340), Bailey (1928, 316-327), Chilton (1971, 15, 84), and Sedley in Macchiaroli (1983, 11-15).

161 It appears once, earlier in the poem: *sed ne mens ipsa necesse / intestinum habeat cunctis in rebus agendis / et devicta quasi cogatur ferre patique, / id facit exiguum clinamen principiorum / nec regione loci certa nec tempore certo* (Lucr. 2.289-293). The entire passage (Lucr. 2.216-293) reveals the swerve as an Epicurean formalization of the supple determinism we already noticed in early atomism (at least as conceived by Democritus: see chapter 2.2.1-2 above). On my reading, then, Bailey (1928, 321) is wrong to accept Epicurean rhetoric (such as that produced by Diogenes of Oenoanda) that reduces Democritus to a hard determinist who must be refuted, and Sedley (in Macchiaroli [1983], 11-51) is right to point out that what Epicurus counters with the swerve is not necessarily Democritus himself, but certain extreme conclusions that some Democriteans (e.g. students of the early atomist who believe in hard determinism) might reach. Epicurus does not deviate markedly from the physical or even ethical program of Democritus. Rather, he comes up with a formal means (the swerve) to codify the indeterminacy observable in nature. He is building on the model of Democritus, not refuting it. This interpretation agrees with the testimony of Cicero: *Quid enim est in physicis Epicuri non a Democrito? Nam etsi quaedam commutavit, ut quod paulo ante de inclinatione atomorum dixi, tamen pleraque dicit eadem, atomos inane imagines, infinitatem locorum innumerabilitatemque mundorum, eorum ortus interitus, omnia fere quibus naturae ratio continetur* (*De nat. deor.* 1.26.73 = Democritus, fr. A51 DK, fr. xcix Luria, and Epicurus, fr. 233 Usener). Formalizing the randomness in the atomist universe (by defining it as a particular atomic event and pointing at it with a special word like παρέγκλισις) does not fundamentally alter it. Such formalization does lend itself to the erection of the straw Democritus mocked by ancient Epicureans and many modern scholars—the Democritus whose mind was so tidy and compartmentalized, according to Barnes (1982, 535), that he failed to notice how his determinist physics make his extensive ethical writings pointless. Where is there room in this caricature for the man who wrote extensively on biology and ethics, fields where randomness was rampant in antiquity as today? Where is there room in it for the man who doubted simple narratives of causation enough to put truth beyond human reach and who devoted an entire book to criticizing his own positions (as though they might require revision)? I confess I do not see it.

The zoogony that follows is similarly Democritean. As in Diodorus (1.7.3-7) and Democritus (fr. 514 Luria), so here animal life originates from wet earth, which produces plants (5.783-796) and then all kinds of animals as the sun shines down upon it.<sup>162</sup> Not all the live offspring of Mother Earth (*linquitur ut merito maternum nomen adepta / terra sit*: 5.795-796) prove viable: some are monsters that arise briefly and then go extinct<sup>163</sup> (though Lucretius is careful to make clear that his earth-born monsters are not traditional monsters of Greek myth, human-animal hybrids which are categorically impossible<sup>164</sup>).

Like the other viable animal species that survive and manage to reproduce, Lucretius' primeval humans are born from the earth (5.823). The first generations are

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162 *multaque nunc etiam existunt animalia terris / imbribus et calido solis concreta vapore; / quo minus est mirum si tum sunt plura coorta / et maiora, nova tellure atque aethere adulta* (5.797-800).

Lucretius imagines the earth producing birds first, then other animals. As in Diodorus (σηπεδόνας ὑμέσι λεπτοῖς περιεχομένας in 1.7.3), so in Lucretius the first generation of animals gestates in earthen wombs (*uteri* in 5.808) imagined as growing in primeval equivalents to the contemporary swamp, where spontaneous generation of small animals was thought to occur still (ὅπερ ἐν τοῖς ἔλεσι καὶ τοῖς λιμνάζουσι τῶν τόπων ἔτι καὶ νῦν ὁρᾶσθαι γινόμενον in Diod. 1.7.3; cf. Lucr. 5.799 quoted above). The likeness between this account of biological generation and the early atomist account of the universe (which is wrapped in an atomic membrane in Diog. 9.32 = DK67A1, DK68A1, fr. 382 Luria) leads some (notably Diels and Luria) to trace it back to Democritus. It recurs elsewhere in antiquity, e.g. in Hermipp. *De astrol.* (Ioann. Catrares) 2.1.6-13 (p. 33 Kroll) and Tzetzes *Schol. ad Hesiod.* (Gaisford *Poet. Gr. Min.* 3.58), texts which appear appended to DK68B5 and in fr. 515 Luria (alongside the witness to Democritus' belief in spontaneous generation in Columella 9.14.6).

163 Remember the monsters of Empedocles, documented on page 71 above in chapter 1.3.5.

164 Lucr. 5.837-924. Compare this with Democritus, fr. 103 Luria, in which humanity has a generic shape that exists necessarily within certain limits. While some variation in human shape occurs (e.g. the man with more or less than five fingers on each hand), it is not completely random. Another fragment to consider here is Democritus, fr. 621 Luria, in which it is always right to kill animals wreaking havoc against justice “in every world” (ἐν παντὶ κόσμῳ). From testimonia like these, it seems that ancient atomists (Leucippus, Democritus, Epicurus, and Lucretius) imagined some absolute limits (referred to as ἀνάγκη by Democritus and Leucippus, as *foedus naturae* in Lucr. 5.924) obtaining across different worlds (such that generic knowledge is in some sense possible: i.e. it is possible to know on some level what ἄνθρωπος is without having seen every instance of it in every κόσμος). Whether we perceive these limits or not—and it would seem that we cannot perceive them perfectly (Democritus, fr. 51, 79-80 Luria)—they exist throughout the atomist multiverse, with the result that Lucretius can confidently dismiss the traditional centaur as a complete physical impossibility, since its parts would necessarily age differently (per the *foedus naturae*): the equine parts would always mature too soon for the human and spell the sterile demise of the unnatural animal before it had time to exist as the adult centaur of myth, which is (only) a figment of the human imagination (5.878-924).

physically and ethically different from their descendants, having a much harder physical constitution (*at genus humanum multo fuit illud in arvis / durius*: 5.925-926) and living asocially, with minimal conspecific interaction:

TEXT (Bailey)	TRANSLATION (Bailey)
<i>multaque per caelum solis volventia lustra / vulgivago vitam tractabant more ferarum / ... / quod sol atque imbres dederant, quod terra crearat / sponte sua, satis id placabat pectora donum / ... / nec commune bonum poterant spectare neque ullis / moribus inter se scibant nec legibus uti. / quod cuique obtulerat praedae fortuna, ferebat / sponte sua sibi quisque valere et vivere doctus. / et Venus in silvis iungebat corpora amantum; / conciliabat enim vel mutua quamque cupido / vel violenta viri vis atque impensa libido / vel pretium, glandes atque arborea vel pira lecta.</i>	<p>And during many lustres of the sun rolling through the sky they prolonged their lives after the roving manner of wild beasts ... What sun and rains had brought to birth, what earth had created unasked, such gift was enough to please their hearts ... Nor could they look to the common weal, nor had they knowledge to make mutual use of any customs or laws. Whatever booty chance had offered to each, he bore it off; for each was taught at his own will to live and thrive for himself alone. And Venus would unite lovers in the woods; for each woman was wooed either by mutual passion, or by the man's fierce force and reckless lust, or by a price, acorns and arbute-berries or choice pears.</p> <p>Lucr. 5.931-932, 937-938, 958-965</p>

Ignorant of civilization—the human collective and the arts that serve it—Lucretius'

primitives live animally (*vulgivago more ferarum*), accepting whatever good or ill fate<sup>165</sup>

<sup>165</sup> Note that the hostility of other animals plays a familiar role in this part of Lucretius' story: wild beasts often drive the first men from their primitive, impermanent dwellings and devour those unfortunate enough to be caught (5.982-998). Unlike Protagoras (per Plato), Lucretius does not make resisting animal aggression a principal cause driving the evolution of human civilization; instead, he points out that the civilization that makes us safer from animal attacks renders us ultimately more vulnerable to mass slaughter as a result of warfare and seafaring, two of the behaviors characteristic of civilization: *at non multa virum sub signis milia ducta / una dies dabat exitio nec turbida ponti / aequora lidebant navis ad saxa virosque* (5.999-1001). A running theme of book 5 is that human happiness does not necessarily improve with the development of new technology and ways of living (e.g. Lucr. 5.1007-1008, 1117-1119, 1131-1135, 1430-1435; this attitude is also evident in the Democritean corpus, e.g. fr. 643, 643d, 651, 652, 653, 750a Luria). Note that Lucr. 5.1117-1119 comes remarkably close to being a Latin version of fr. 643d Luria. The debt of Epicureanism to earlier atomism is evident here.

they happen upon (*quod cuique obtulerat praedae fortuna, ferebat*). Every human being necessarily shifts for himself, learning from individual experience how to survive and thrive on his own (*sponte sua sibi quisque valere et vivere doctus*). This roving animal life is lonely but not entirely without social interaction: it includes procreation (*et Venus in silvis iungebat corpora amantum*), which ultimately gives rise to the first civilization, when some fortunate lovers acquire the means (houses, clothing of animal skins, and fire in 5.1011) to live together with their offspring long enough to become families, settle permanently in one place, and form the first civil societies, which are held together by friendship (*amicitia*) that gives rise naturally to communal agreements (*foedera*):

TEXT (Bailey)	TRANSLATION (Bailey)
<p><i>postquam ... prolemque ex se videre creatam, tum genus humanum primum mollescere coepit ... et Venus imminuit viris puerique parentum / blanditiis facile ingenium fregere superbum. / tunc et amicitiam coeperunt iungere aventes / finitimi inter se nec laedere nec violari, / et pueros commendarunt muliebreque saeculum, / vocibus et gestu cum balbe significarent / imbecillorum esse aequum misererier omnis. / nec tamen omnimodis poterat concordia gigni, / sed bona magnaue pars servabat foedera caste; / aut genus humanum iam tum foret omne peremptum / nec potuisset adhuc perducere saecla propago.</i></p>	<p>Then after ... they saw children sprung from them, then the first race of men began to soften ... Venus lessened their strength, and children, by their winning ways, easily broke down the haughty will of their parents. Then, too, neighbors began to form friendship one with another, longing neither to hurt nor to be harmed, and they commended to mercy children and the race of women, when with cries and gestures they taught by broken words that 'tis right for all men to have pity on the weak. Yet not in all ways could unity be begotten, but a good part, the larger part, would keep their compacts loyally; or else the human race would even then have been destroyed, nor could breeding have prolonged the generations until now.</p> <p>Lucr. 5.1011-1027</p>

Once a *commune bonum* exists, the most inventive individual inevitably acquires royal authority, which he uses to distribute rewards among his friends. In this way, the first government is formed, a primitive kingdom (5.1105-1112). At first, the criteria that determine one's position in society are physical beauty and strength, but wealth in the form of accumulated property (and precious metal) eventually becomes more important. When the number of wealthy people competing for places at the top of society increases, owing to the desire of individual men to control their fortune,<sup>166</sup> the primitive kingdom disintegrates into civil war, which eventually leads people to accept the rule of law as supreme, rather than designate some individual or group as having innate authority owing to their characteristics (5.1113-1116, 1136-1150). Fear of lawful punishment becomes the only check on the individual human's desire to dominate, and the evolution of the modern state (with laws appointing magistrates to administer punishment to the jealous vigilante) is complete (5.1151-1155). The power of Venus and *amicitia* that initially created society gives way to *metus* (and the stage is set for an Epicurean withdrawal from public life).

The Epicurean story of human social evolution preserved by Lucretius offers an interesting insight from the perspective of this study. Lucretius' hard primitives are drawn together initially by the same natural tendency (referred to poetically as Venus) that draws all life to propagate itself (*per te quoniam genus omne animantum concipitur visitque exortum lumina solis*: 1.4-5). Once together, these primitives inevitably notice and react to one another. They begin to soften, making themselves vulnerable to one

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<sup>166</sup> *at claros homines voluerunt se atque potentis, / ut fundamento stabili fortuna maneret / et placidam possent opulenti degere vitam* (Lucr. 5.1120-1122).

another and coming up with agreements (*foedera* in 5.1025 above) designed to tame their innate animal wildness (which would not necessarily take pity on the weak or cultivate friendship without an immediate reward in view).<sup>167</sup> This Epicurean narrative is remarkably close to the Democritean one(s) evident in fr. 620-623 Luria (on the nature of δίκη as it applies to humans and animals)<sup>168</sup> and especially in fr. 562 Luria (on the getting of offspring in animals and humans).<sup>169</sup> In Democritus, as in Lucretius, nature (ἀνάγκη) creates man with an automatic animal tendency (to self-preservation in fr. 620-623 Luria, procreation in fr. 562 Luria) that man domesticates and reshapes into a deliberate moral habit (the νόμοι πάτριοι in fr. 623 Luria, a νομίζον in fr. 562 Luria). Lucretius' story of the evolution of language provides another clear instance of this Democritean narrative pattern (i.e. *nature gives man automatic, unpremeditated animal tendencies that he cultivates and turns into deliberate moral habits*):

TEXT (Bailey)	TRANSLATION (Bailey)
<i>at varios linguae sonitus natura subegit / mittere et utilitas expressit nomina rerum, non alia longe ratione atque ipsa videtur / protrahere ad gestum pueros infantia linguae, / cum facit ut digito quae sint praesentia monstrent. / sentit enim vis quisque suas quoad possit abuti. / ... / postremo quid in hac mirabile tantoperest re, / si genus humanum, cui vox et lingua vigeret, / pro vario sensu varia res voce notaret? / cum pecudes mutae, cum denique saecula ferarum / dissimilis soleant voces variasque ciere, / cum metus aut</i>	But the diverse sounds of the tongue nature constrained men to utter, and use shaped names of things, in a manner not far other than the very speechlessness of their tongue is seen to lead children on to gesture, when it makes them point out with the finger the things that are before their eyes. For everyone feels to what purpose he can use his own powers ... Lastly, what is there so marvellous in this, if the human race, with strong voice and tongue, should mark off things with diverse sounds for diverse feelings? For the dumb cattle, yea

167 Note the similarity with Polyb. 6.6.1-7, quoted and discussed above on pages 225-241.

168 The fragments are quoted and discussed above on pages 185-198.

169 The fragment is quoted and discussed above on pages 188-199.

<i>dolor est et cum iam gaudia gliscunt. / ... /  ergo si varii sensus animalia cogunt, /  muta tamen cum sint, varias emittere  voces, / quanto mortalis magis aequumst  tum potuisse / dissimilis alia atque alia res  voce notare!</i>	and the races of wild beasts are wont to give forth diverse unlike sounds, when they are in fear or pain, or again when their joys grow strong ... And so, if diverse feelings constrain animals, though they are dumb, to utter diverse sounds, how much more likely is it that mortals should then have been able to mark off things unlike with one sound and another!  Lucr. 5.1028-1090
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Nature forces men and animals to make sounds, vocalizing in response to their perception of the evolving reality around them. Humans in proximity to each other notice their vocalizations and make them regular, creating the patterns of sound we call language.<sup>170</sup> Once formed, these regular sonar patterns perpetuate themselves through communities that use them naturally, as people use them to interact. This is essentially the vision of human learning represented in Democritus, fr. 682 Luria, where nature and instruction are alike in that both mould the plastic shape of humanity.<sup>171</sup> Nature shapes us such that we vocalize (or defend ourselves, or procreate). Instruction then shapes us such that we speak (or defend ourselves within certain limits, or expect benefit from our offspring). This fundamental insight is as important to Lucretius (and Epicurus) as to Democritus, as further investigation of Lucretius' *Kulturgeschichte* makes clear.

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<sup>170</sup> Lucretius makes language a communal discovery rather than an individual one, denying the pervasive ancient myth that made language and other cultural artifacts gifts from single inventors, whether human or divine (5.1041-1055). The difference that ancient students (e.g. Proclus, *in Crat.* 16 p. 5, 25 Pasquali = Democritus, fr. 563 Luria, quoted and discussed above on pages 255-265) find between Epicurean and Democritean perspectives on language does not arise explicitly here, though if we read other sources (e.g. Epicurus, *Ad Herod.* 75-76) it becomes clear that Epicurus saw the connection between word and referent as a natural one (such that there is a natural human *vox* associated with every human *sensus*), where Democritus saw it as purely arbitrary (such that there is no natural association between particular words in any language and their referents). See Cole (1967), 61-63.

<sup>171</sup> See pages 259-269 above.

Like the other *Kulturgeschichten* examined in this chapter, Lucretius' explains human cultural evolution as a cumulative, collective response to environmental stimuli. Certain recurring natural phenomena (e.g. procreation or vocalization in the parts of the narrative examined above) become αἰτίαι for moral habits that men organize and systematize (e.g. to create civil society or language in the way already discussed). This is particularly clear when we consider Lucretius' accounts of the *artes* (other than language or government by law) that make civilized life possible for humanity. Like Diodorus, Lucretius imagines nature herself as mankind's first tutor in developing these arts. The instruction that Lucretian nature gives to her human pupils reminds us very much of Democritean *Kulturgeschichte*, as it remains extant. This is particularly true when we consider how Lucretius describes the development of (i) cooking, (ii) agriculture, (iii) metallurgy, and (iv) music. Each of these *artes* emerges as people notice certain events occurring naturally and conceive conscious plans for replicating and improving nature's performance (such that consequences favorable to human survival and enjoyment are maximized while those unfavorable are avoided or minimized).

(i) Consider the origin of cooking:

TEXT (Bailey)	TRANSLATION (Bailey)
<i>fulmen detulit in terram mortalibus ignem / primitus, inde omnis flammaram diditur ardor. / multa videmus caelestibus incita flammis / fulgere, cum caeli donavit plaga vapore. / et ramosa tamen cum ventis pulsa vacillans / aestuat in ramos incumbens arboris arbor; / exprimitur validis extritus viribus ignis, / emicat interdum flammai</i>	It was the lightning that first of all brought fire to earth for mortals, and from it all the heat of flames is spread abroad. For we see many things flare up, kindled with flames from heaven, when a stroke from the sky has brought the gift of heat. Yet again, when a branching tree is lashed by the winds and sways to and fro, reeling and



<i>fervidus ardor, / mutua dum inter se rami stirpesque teruntur. / quorum utrumque dedit potest mortalibus ignem. / inde cibum coquere ac flammae mollire vapore / sol docuit, quoniam mitescere multa videbant / verberibus radiorum atque aestu victa per agros.</i>	pressing on the branches of another tree, fire is struck out by the strong force of the rubbing, anon the fiery heat of flame sparkles out, while branches and trunks rub each against the other. Either of these happenings may have given fire to mortals. And then the sun taught them to cook food and soften it by the heat of flame, since they saw many things among the fields grow mellow, vanquished by the lashing of his rays and by the heat.  Lucr. 5.1092-1104
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Human beings first acquire fire, either from lightning or from tree branches rubbing together. (Notice that Lucretius is careful not to make either of these natural events the sole source for fire: both recur such that either would offer early humans multiple opportunities to acquire fire. There is not one identifiable source here for humanity's acquisition of fire, but a family of sources defined by fires that occur in nature.<sup>172</sup>)

Humans find natural fire, notice what it requires to exist, and domesticate it, replicating in the hearth what they observe nature doing with lightning or spontaneous combustion.)

Once they have fire, the sun teaches them how to use it: when they see solar heat cooking things naturally in the fields, they begin to use the heat of domestic fire to cook things at the hearth. Thus nature gives men fire and shows them how to use it.

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<sup>172</sup> For more about atomist skepticism regarding our ability to identify specific causes precisely, see chapter 2.2.1-2 above. This episode in Lucretius offers a concrete instance of how ancient atomism deals with causation (i.e. by appealing to probability rather than to some formal theory affecting to identify particular effects with specific causes). Where nature creates man with certain needs, tastes, and tendencies, and creates fire in his environment, ancient atomists would say, humans will likely acquire fire, at some time, by taking advantage of some natural circumstance. Where there are multiple natural circumstances providing fire constantly, any of these is as likely as another to be the origin of domestic fire in a given human community. This is an indifference argument, regarding which see chapter 2.2.2 (c) above.

(ii) Agriculture and (iii) metallurgy arise in the same way:

TEXT (Bailey)	TRANSLATION (Bailey)
<p>(ii) <i>at specimen sationis et insitionis origo / ipsa fuit rerum primum natura creatrix, / arboribus quoniam bacae glandesque caducae / tempestiva dabant pullorum examina subter; / unde etiam libitumst stirpis committere ramis / et nova defodere in terram virgulta per agros. / inde aliam atque aliam culturam dulcis agelli / temptabant fructusque feros mansuescere terra / cernebant indulgendo blandeque colendo. / inque dies magis in montem succedere silvas / cgebant infraque locum concedere cultis, / prata lacus rivos segetes vinetaque laeta / collibus et campis ut haberent, atque olearum / caerula distinguens inter plaga currere posset / per tumulos et convallis camposque profusa; ut nunc esse vides vario distincta lepore / omnia, quae pomis intersita dulcibus ornant / arbustisque tenent felicibus obsita circum.</i></p>	<p>But nature herself, creatress of things, was first a pattern for sowing and the beginning of grafting, since berries and nuts fallen from the trees in due time put forth swarms of shoots beneath; from nature, too, they learnt to insert grafts into branches, and to plant young saplings in the ground over the fields. Then one after another they essayed ways of tilling their smiling plot, and saw wild fruits grow tame in the ground with tender care and fond tilling. And day by day they would constrain the woods more and more to retire up the mountains, and to give up the land beneath to tilth, that on hills and plains they might have meadows, pools, streams, crops, and glad vineyards, and the grey belt of olives might run between with its clear line, speading over hillocks and hollows and plains; even as now you see all the land clear marked with diverse beauties, where men make it bright by planting it here and there with sweet fruit-trees, and fence it by planting it all round with fruitful shrubs.</p> <p>Lucr. 5.1361-1377</p>

<p>(iii) <i>quod superest, aes atque aurum ferrumque repertumst / et simul argenti pondus plumbique potestas, / ignis ubi ingentis silvas ardore cremarat / montibus in magnis ... / ... / quidquid id est, quacumque e causa flammeus ardor / horribili sonitu silvas exederat altis / a radicibus et terram percoxerat igni, / manabat venis ferventibus in loca terrae / concava conveniens argenti rivus et auri, / aeris item et plumbi. quae cum concreta videbant / posterius claro in terra splendere colore / tollebant nitido capti levique lepore, / et simili formata videbant esse figura / atque lacunarum fuerant vestigia cuique. / tum penetrabat eos posse haec liquefacta calore / quamlibet in formam et faciem decurrere rerum / et prorsum quamvis in acuta ac tenvia posse / mucronum duci fastigia procudendo, / ut sibi tela parent, silvasque ut caedere possint / materiemque dolare et levia radere tigna / et terebrare etiam et pertundere perque forare. / nec minus argento facere haec auroque parabant / quam validi primum violentis viribus aeris, / nequiquam, quoniam cedebat victa potestas, / nec poterant pariter durum sufferre laborem.</i></p>	<p>For the rest, copper and gold and iron were discovered, and with them the weight of silver and the usefulness of lead, when a fire had burnt down vast forests with its heat on mighty mountains ... However that may be, for whatever cause<sup>173</sup> the flaming heat had eaten up the forests from their deep roots with terrible crackling, and had baked the earth with fire, the streams of silver and gold, and likewise of copper and lead, gathered together and trickled from the boiling veins into hollow places in the ground. And when they saw them afterwards hardened and shining on the ground with brilliant hue, they picked them up, charmed by their smooth bright beauty, and saw that they were shaped with outline like that of the several prints of the hollows. Then it came home to them that these metals might be melted by heat, and would run into the form and figure of anything, and indeed might be hammered out and shaped into points and tips, however sharp and fine, so that they might fashion weapons for themselves, and be able to cut down forests and hew timber and plane beams smooth, yea, and to bore and punch and drill holes. And, first of all, they set forth to do this no less with silver and gold than with the resistless strength of stout copper; all in vain, since their power was vanquished and yielded, nor could they like others endure the cruel strain.</p> <p>Lucr. 5.1241-1244, 1252-1270</p>
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<sup>173</sup> The lines omitted here enumerate different circumstances that might cause the forest fire that reveals the idea of metallurgy to mankind. The circumstances range from natural disasters (e.g. lightning igniting a forest by accident) to those created deliberately by humans (e.g. primitive hunting techniques calculated to defeat thick underbrush). The theory of causation evident here is the same one apparent in the earlier story of mankind's discovery of fire: see note 172 above in this chapter.

Nature offers (ii) a pattern for agriculture (*specimen sationis et insitionis*), a pattern that men perceive and then develop to modern standards by trial and error (*inde aliam atque aliam culturam dulcis agelli / temptabant fructusque feros mansuescere terra / cernebant indulgendo blandeque colendo*). The process takes time (*inque dies magis in montem succedere silvas / cogeabant infraque locum concedere cultis*). In similar fashion, a forest fire—which derives from nature either directly (when lightning strikes dry woodland) or indirectly (when humans deliberately burn woodland with fire taken from nature)—introduces mankind to (iii) metals (copper, gold, iron, silver, lead) and to the reality that metals can be melted down and moulded. Seeing molten metal cool in natural trenches, whose shape it naturally adopts, men conceive the notion of melting metal on purpose (rather than by accident), and shaping it deliberately to make tools (*tum penetrabat eos posse haec liquefacta calore / quamlibet in formam et faciem decurrere rerum / ... / ut sibi tela parent*). The image of metal melting and cooling accidentally in the woods penetrates their minds<sup>174</sup> and gives them an idea for deliberate metallurgy that they develop to modern standards by trial and error, using every metal available for every sort of tool and seeing for themselves which work and which do not (*nec minus argento facere haec auroque parabant / quam validi primum violentis viribus aeris, / nequiquam, quoniam cedebat victa potestas, / nec poterant pariter durum sufferre laborem*). The perfection of metallurgy requires time and experience, which men require to turn the unexpected accident of nature into a deliberate human *ars*.<sup>175</sup>

174 A very atomist way of conceiving inspiration: see chapter 2.3 and pages 227-241, 248-263 above.

175 *et prior aeris erat quam ferri cognitus usus, / quo facilis magis est natura et copia maior. / aere solum terrae tractabant, aereque belli / miscebant fluctus et vulnera vasta serebant / et pecus atque agros adimebant. nam facile ollis / omnia cedebant armatis nuda et inerma. / inde minutatim processit*

The Lucretian *natura creatrix* that teaches humanity the arts of civilization is familiar to us already from Diodorus (1.8.1-9)<sup>176</sup> and Democritus (fr. 561, 682 Luria).<sup>177</sup> From the perspective of this study, (iv) music is undoubtedly the most interesting lesson that primitive people learn from *natura* in Lucretius:

TEXT (Bailey)	TRANSLATION (Smith [1969])
(iv) <i>at liquidas avium voces imitauer ore / ante fuit multo quam levia carmina cantu / concelebrare homines possent aurisque iuvare. / et zephyri, cava per calamorum, sibila primum / agrestis docuere cavas inflare cicutas.</i>	People imitated with their mouths the liquid warblings of birds long before they were able to join together in singing melodious songs with pleasure to the ear. And it was the whistling of the zephyr in the cavities of reeds that first taught country folk to blow into hollow stalks.  Lucr. 5.1379-1383

Born with the natural capacity of observing reality and responding to it vocally (Lucr. 5.1028-1029),<sup>178</sup> Lucretius' primitives observe birds singing and reproduce the animals' efforts as clumsy imitations that practice and time eventually turn into polished *carmina* (5.1029-1030). This passage offers an Epicurean version of Democritus, fr. 559 Luria,

*ferreus ensis / versaque in opprobrium species est falcis ahenae, / et ferro coepere solum proscindere terrae / exaequataque sunt creperi certamina belli* (Lucr. 5.1287-1296). Warfare is another civilized art that develops in this way, as people deploy different animals on the battlefield and learn from the results which species are really suited to assist human soldiers there (Lucr. 5.1297-1349).

176 Where natural need (χρεία) becomes mankind's teacher (διδάσκαλος), allowing us to develop civilized arts (τέχναι) over time. See pages 246-257 above.

177 In fr. 561, an ass accidentally copulates with a mare in nature, inspiring human observers to breed mules deliberately. See pages 190 and 211 above. In fr. 682, φύσις gives man a shape that is altered over time by διδασχί, presumably as humans (individually and collectively) come into contact with atomic images in their environment and react to them (e.g. by turning the accidental mating of ass and mare into the deliberate custom of breeding mules). See pages 250-263 above. Note that Lucretius produces an aphorism that is practically a Latin version of fr. 682: *sic unumquicquid paulatim protrahit aetas / in medium ratioque in luminis erigit oras* (5.1454-1455). The regular, atelic process of nature (φύσις, *aetas*) gives humanity accidents (mares reproducing with asses, fires kindling in the woods) that we, with our perceptive faculties (that recognize and respond to διδασχί and *ratio*), turn into deliberate habits that reshape the process of nature (at least as it plays out around us).

178 Compare Epicur. *Epist.* 1.76: τινὰ δὲ καὶ οὐ συννορώμενα πράγματα εἰσφέροντας τοὺς συνειδόμενους παρεγγυῆσαι τινὰς φθόγγους τοὺς <μὲν> ἀναγκασθέντας ἀναφωνῆσαι ...

wherein birds (and other λιγυρά in nature) teach human beings to sing: ὧν [τῶν ζῳῶν] ὁ Δημόκριτος ἀποφαίνει μαθητὰς ἐν τοῖς μεγίστοις γεγονότας ἡμᾶς ... καὶ τῶν λιγυρῶν, κύκνου καὶ ἀηδόνος, ἐν ᾧδῃ κατὰ μίμησιν (Plut. *De sollert. animal.* 20 p. 974a). Given what we know of Democritean *Kulturgeschichte* apart from this dramatic coincidence with Epicureanism—viz. that it involves human beings evolving a certain way naturally (chapter 2.3 above)<sup>179</sup> and then reshaping their nature through teaching (fr. 682 Luria), specifically the teaching of animals (frr. 559, 561 Luria)—it is hard to avoid the conclusion that Lucretius' account of music represents a direct reception of Democritus. This appears even more likely when music arises for both as something coincidental, a pleasant accident that comes about only after essential needs are met:

TEXT ( <i>text</i> )	TRANSLATION ( <i>translator</i> )
(iv) <i>inde minutatim dulcis didicere querellas, / tibia quas fundit digitis pulsata canentum, / avia per nemora ac silvas saltusque reperta, / per loca pastorum deserta atque otia dia. / ... / haec animos ollis mulcebant atque iuvabant / cum satiate cibi; nam tum sunt omnia cordi. / ... / tum ioca, tum sermo, tum dulces esse cachinni / consuerant. agrestis enim tum musa vigeat; / tum caput atque umeros plexis redimire coronis / floribus et foliis lascivia laeta monebat, / atque extra numerum procedere membra moventis / duriter et duro terram pede pellere matrem; / unde oriebantur risus dulcesque cachinni, / omnia quod nova tum magis haec et mira vigeant. / et vigilantibus hinc</i>	Then little by little they learned the sweet notes that ripple from the plaintive pipe as the player's fingers strike the stops—the pipe invented in pathless woods and forests and forest glades, in the solitary spots where shepherds rest in the open air. With this music they would soothe and charm their hearts after they had eaten their fill; for that is the time when everything affords pleasure ... Then there would be jokes, talk, and peals of pleasant laughter; for then the rustic muse was at its best. Then, prompted by playful gaiety, they would deck their heads and shoulders with garlands of interwoven flowers and foliage and move their limbs clumsily in an unrhythmical dance, striking mother earth

<sup>179</sup> Note that both Democritus and Epicurus regard the voice as a stream of particles (ῥεῦμα ἀτόμων in Gell. *Noct. Att.* 5.15.8 = Democritus, fr. 492 Luria), which the individual animal projects from its mouth (as crier, speaker, or singer) and receives (as auditor) most through its ears (since there is more void in the ear: Democritus, fr. 488 Luria = Theophr. *De Sensu* 55-57).

<p><i>aderant solacia somno, / ducere multi- modis voces et flectere cantus / et supera calamos unco percurrere labro; / unde etiam vigiles nunc haec accepta tuentur / et numerus servare genus didicere, neque hilo / maiorem interea capiunt dulcedini' fructum / quam silvestre genus capiebat terrigenarum.</i> (Bailey)</p>	<p>with clumsy feet. These performances would provoke smiles and peals of pleasant laughter, because all such pastimes, being new and wonderful, had a greater effect at that time. And the wakeful would find ready consolations for sleeplessness in guiding their voices through the many modulations of a song and in running over the reeds with pursed lips. This old tradition is still kept up by watchmen today; and although they have learned to keep time, they do not derive any more pleasure from their music than did those woodland folk, the children of earth. (Smith [1969])</p> <p>Lucr. 5.1384-1387, 1390-1391, 1397-1411</p>
<p>Δημόκριτος ... μουσικήν φησι νεωτέραν εἶναι καὶ τὴν αἰτίαν ἀποδίδωσι λέγων μὴ ἀποκρίναι τἀναγκαῖον, ἀλλὰ ἐκ τοῦ περιεῦντος ἤδη γενέσθαι. (Luria)</p>	<p>Democritus ... says that music is more recent, and identifies its cause, saying that it was not singled out by necessity, but arose as a result of plenty. (Taylor)</p> <p>Democritus, fr. B144 DK = fr. 213 Taylor = fr. 568 Luria</p> <p>Philod. <i>De musica</i> 4.31, p. 108.29 Kemke; Herculaneum pap. 1497, col. 36.29-39</p>

Lucretius' primitives practice music after they have eaten (*cum satiate cibi*), recognizing the Democritean hierarchy between essential arts (that serve human survival directly and necessarily: we cannot survive without food)<sup>180</sup> and accidental ones (that come into being as natural but unnecessary consequences of human beings surviving: we can survive without music). Their musical learning mirrors the Democritean model for cultural

<sup>180</sup> See also Democritus, frs. 562, 646, 717, and 732 Luria, which are discussed at some length on pages 236-248 above.

development reflected in fr. 561 and especially 682 Luria: at first, their music is unrhythmical (*extra numerum*) and uncultivated or animal (*agrestis musa vigeat*); over time, it becomes more orderly and human (note the contrast between modern and primitive man implicit in Lucretius' reference to the latter as *silvestre genus*), as learning changes nature (*numerum servare genus didicere*): in Democritean terms, διδασκίη alters the human ῥυθμός created by φύσις (fr. 682 Luria).

The resonance between Lucretius and Democritus is too significant and specific to be dismissed as empty coincidence, in my opinion.<sup>181</sup> From the foregoing discussion, it seems clear that Epicurean *Kulturgeschichte* (of which Lucretius represents our most extensive source) borrows from its Democritean predecessor(s) at least (1) the narrative template that imagines humanity inheriting its primitive nature through a series of cosmic accidents and then reshaping that nature by observing and reacting consciously to its accidental environment, i.e. learning (fr. 682 Luria); and (2) the detail that certain specific human arts (at least music) originate with humans who observe and react consciously to animals engaging in natural activities (fr. 559, 561, 568 Luria). Among the cultural historians here examined, Lucretius thus offers the closest likeness to Democritus that remains extant, unless that position should go to Diodorus (as some scholars might still reasonably argue). At the very least, Lucretius shows us that Democritean influence remains active and identifiable in Epicurean *Kulturgeschichte*.

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<sup>181</sup> This is particularly true in light of other ancient testimony confirming that Epicurus borrowed extensively from Democritus, who is supposed to have written many books. See Democritus, fr. xcvi (on the relationship between Democritus and Epicurus), and cxv Luria (on Democritus' oeuvre).



### Summary and Conclusion (3.2.3)

In light of everything this study has revealed thus far—our knowledge of the Critical Tradition, our knowledge of Democritus' thought, and our reading of the other *Kulturgeschichten* discussed in this chapter—we discover several critical facts relating to Democritean *Kulturgeschichte*. These facts are as follows:

(i) Many writers in the Critical Tradition offer some account of the origin and development of human life—an anthropogony that locates mankind in the history of the material διάκοσμος, showing how physical elements give birth to human morality. Some writers imagine mankind originating as primitive animals and then differentiating over time, changing and developing their primitive animal shape until it becomes recognizably human and contemporary (see section 3.1 above).

(ii) Following Critical precedent, Democritus offered at least one anthropogony (imperfectly extant in fr. 514 Luria) that follows earlier authors of the Critical Tradition in making human beings primitive animals who differentiate and develop, reshaping their original nature in response to their environment (see 3.2 above, and fr. 682 Luria).

(iii) Democritus' fragments indicate that his discussion of human differentiation included a *Kulturgeschichte* (partially extant in frs. 559, 561, 568, 682 Luria)—similar to other *Kulturgeschichten* that arise within the Critical Tradition as it exists contemporary with Democritus (e.g. the *Kulturgeschichten* of Archelaus, Protagoras, and Plato, examined at length in section 3.2.2 above).

(iv) Comparison shows significant resonance between the Democritean corpus

and the *Kulturgeschichte* of his contemporaries in the Critical Tradition: if Archelaus, Protagoras, and Plato could compose developed Critical *Kulturgeschichte* that imagine human beings acquiring specific kinds of culture in response to impersonal stimuli in their environment (e.g. their own physical weakness, conflict with other animals, and intraspecific interaction), then Democritus could as well. (There is no reason to suppose the early atomist's extensive writings neglected what appears to have been a very hot topic, even if there were no testimonia confirming that he composed *Kulturgeschichte*. Given that these testimonia exist, it seems highly likely that the atomist had a narrative at least as developed as those of Archelaus, Protagoras, and Plato.) Note that Democritus' ethical corpus reveal a perspective on reality similar to those that drive these narratives—particularly that of Plato, whose εἰκός looks much like the indeterminacy inherent in biological manifestations of atomist ἀνάγκη that some later students of Democritus call τύχη (e.g. Aelian in fr. 561 Luria).<sup>182</sup>

(v) Comparison with select *Kulturgeschichte* that post-date Democritus reveals additional resonance: Polybius, Diodorus, and Lucretius all offer *Kulturgeschichte* close to the Critical Tradition whose narrative development and moral outlook resonate with the extant Democritean corpus strongly, sometimes even more than that of the earlier authors (e.g. when the relationship between humanity and the environment to which it

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<sup>182</sup> See the discussion of supple determinism in chapter 2.2.1-2 above, esp. where it treats fr. 103 and 316 Luria. Democritean necessity means that man (like any other animal species) is necessarily possessed of certain characteristics (e.g. hands), but it does not mean that every man has the exact same number of digits or that all men live in the same geographic location (fr. 103 Luria). These things are a matter of accident, just like the accident that leads to certain men coming up with the idea to breed mules (in fr. 561 Luria). We cannot know which men will have the idea first, only that some will likely see a natural mule born and draw conclusions leading to mules being bred artificially.

adapts is defined by human opportunism taking advantage of natural accidents, and when animals teach us culture). It is possible that this comes from Democritus being a source for Polybius and Diodorus, as he almost certainly is for Lucretius via Epicurus.

The upshot of this investigation is that Democritean *Kulturgeschichte* is not really as obscure or irrecoverable as it sometimes seems.<sup>183</sup> Even if we do not possess enough information to say precisely what Democritus wrote about the development of human culture in some specific work, we can sketch an accurate picture of the general form his narrative(s) most likely took. Since Democritus' outlook on reality deliberately eschews certainty<sup>184</sup> and he is supposed to have written at least one book criticizing his own work (the Κρατυντήρια),<sup>185</sup> it is not wise to imagine him laying down a single, dogmatic version of the atomist διάκοσμος. The most we can hope for is an idea of the kind of narrative he would write, given his predilections as they appear in the historical record. The appropriate question to answer is not *what precisely did Democritus write by way of Kulturgeschichte?* but *what sort of Kulturgeschichte would Democritus write, given what we know of him?* The former question cannot be answered. The latter can, and the answer is useful, as I will demonstrate.

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183 E.g. when Cole (1967) fails to establish an unquestionable genealogy for all the *Kulturgeschichten* he interrogates that traces them back inevitably to Democritus. He fails because the early atomist was admittedly not the only thinker interested in cultural history, nor even the only thinker who sought to explain cultural history as the result of humans taking opportunistic advantage of natural accidents. While Cole's failure makes it inadvisable to attribute any of the extant *Kulturgeschichten* that he studies unreservedly to Democritus, it does not mean that we have no clear idea what the early atomist's ideas on cultural history were. We have enough data to determine what sort of *Kulturgeschichte* Democritus would have written, even though we cannot say whether any of the *Kulturgeschichten* that resonate most with extant fragments of the Democritean corpus derive their existence directly from it. Neither Polybius, nor Diodorus, nor Lucretius can be said to depend wholly on Democritus.

184 See fr. 49, 51, 55, 79-80 Luria, quoted on pages 132 and 174-166 above.

185 ὅπερ ἔστιν ἐπικριτικὰ τῶν προειρημένων (Diog. 9.47 = fr. cxv Luria).

What follows is a representation of Democritus' *Kulturgeschichte* (reconstructed from the evidence already discussed) and a brief assessment of its importance for our understanding of practical Democritean ethics (the subject of the next chapter). We begin with a recapitulation of the early atomist cosmogony (in order to demonstrate clearly the nature of the relationship between physics, biology, and ethics in Democritean thought):

*Infinite atoms move endlessly through infinite void, crashing into each other and rebounding and/or adhering to form various impermanent compounds. When enough of these compounds come together thus in one particular place, a world (κόσμος) is formed. The world exists as a temporary collection of atoms that move relative to one another through a series of orderly relationships (defined by the principle that like particles necessarily sort themselves with like).<sup>186</sup> The collection of atoms that is the world develops naturally over time such that it has a beginning (when it emerges from the chaos of atoms swirling in the void and grows larger through the acquisition of more atoms), a middle (the ἀκμή, when no more atoms can be assimilated to the world and it begins to lose atoms instead of adding them), and an end (when the world finally dissolves, leaving its atoms to be recycled as part of other worlds).<sup>187</sup>*

*As part of its historical development, the world inevitably produces objects, some inanimate (like earth, ocean, and sky) and others animate (the animals inhabiting earth, ocean, and sky). All these objects necessarily have a certain shape (ῥυσμός) not to be confused with the shape (ῥυσμός) of the individual atoms that make them up at any given*

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<sup>186</sup> See fr. 315-323 Luria, esp. fr. 316.

<sup>187</sup> See fr. 343-360 Luria, esp. fr. 349. See also the discussion in chapter 2.2 above.

*moment in time. Where the shape of an individual atom is eternal and immutable, as the atom itself is,<sup>188</sup> the shape of the objects that atoms form are temporal and mutable, subject to change in the same way that the world itself is.<sup>189</sup> Each object in the world has a beginning (when the atoms that compound it come together), an ἀκμή (when it cannot grow larger through the accumulation of more atoms and begins to wear down, losing atoms to its surrounding environment), and an end (when it dissolves and, if it is animate, dies). The shape of these temporary objects is regular (supple determinism) without being utterly or minutely predictable (rigid determinism).<sup>190</sup>*

*Human beings are among the objects that worlds produce over the course of their historical development. Individually, each of us exists as a cloud of atoms with a regular shape (ῥυσμός) that changes over time, naturally and necessarily, the same way that the shape of other objects changes (whether rocks weathering or animals aging).<sup>191</sup> We are born (when a critical mass of soul atoms animates the cloud of atoms incorporating a human body), reach ἀκμή (when body and soul grow to maturity), decline (when our body begins to lose atomic mass), and die (when our body loses a critical mass of soul atoms). In addition to individual shape, human beings have collective shape as well. Like other objects in the world, the individual human being naturally and necessarily associates with others like himself, forming conspecific societies<sup>192</sup> endowed with mutable*

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188 See fr. 211-248 Luria, esp. fr. 240-242 (where Democritean usage of the term ῥυσμός to designate immutable atomic shape is documented).

189 See fr. 238-248, 288-313, 326 Luria, esp. fr. 326 (where Democritean use of the term ῥυσμός to designate mutable physical shape is documented). See also the discussion in chapter 2.2 above.

190 See fr. 9, 22-23, 29, 32, 51, 58, 65, 93, 102-103, 184, 215, 291, 316, 382 Luria, esp. fr. 103 and 316. See also the discussion in chapter 2.2.1-2 above.

191 See fr. 682 Luria, where nature gives man a ῥυσμός that instruction changes.

192 See fr. 316 Luria.

*shape (ῥυσμός). Like individual human beings, human societies are temporary clouds of moving atoms, clouds whose shape evolves from birth (when a particular social order comes into being) to ἀκμή (when a particular social order reaches the pitch of its expression) to death (when a particular social order disbands).<sup>193</sup> For Democritus, thus, human moral behavior (i.e. ethics or culture) exists where the temporary shape of an individual human being encounters—and reacts with—temporary shapes in the world around it, including (but certainly not limited to) the larger, collective human shape(s) of the society (or societies) in which the individual participates.*

*When human life first comes into existence (arising out of primitive marshes by the process of natural and necessary atomic association and evolution that creates everything in the world),<sup>194</sup> its shape (individual and collective) is wholly natural—like that of any other animal. The first generation of humans arrives with certain innate needs (e.g. for protection, nourishment, association with like organisms, and procreation) that it satisfies as its environment allows (e.g. through the accidental presence of water, food, materials offering shelter, and members of its own animal species that include fertile representatives of the opposite sex).<sup>195</sup> Initially, primitive human beings satisfy these innate needs accidentally and instinctively. Individual humans experience animal emotions (e.g. fear, thirst, hunger, or lust) and chance upon some animal means of satiating them (e.g. running from danger, confronting danger, drinking water, eating wild food, or*

193 See fr. 613 Luria, where the contemporary Greek πόλις has a ῥυσμός subject to temporal evolution, and note that fr. 559, 561, and 568 presume that the shape of collective human culture (society) evolves temporally through the acquisition of various new complex habits or τέχναι (weaving, mending, house-building, music, and mule-breeding).

194 See fr. 316, 514-515 Luria, and the discussion in chapter 2.3 above.

195 See fr. 316, 562, 568, 646, 717, 723 Luria, and the discussion on pages 248-261 above.

*procreating with an available member of the opposite sex).*<sup>196</sup> *The creation of the first society is one result of this natural process, since like inevitably seeks like in the early atomist multiverse.*<sup>197</sup> *This primitive human society has a natural, animal shape: it instinctively values biological necessities (like protection, water, food, procreation) and provides basic means for preserving human access to these. Initially, it provides such means purely by accident, as resources (the material means offering protection, water, food, and procreation) exist in the surrounding environment and human beings have the luck to stumble across them.*<sup>198</sup> *But necessity inevitably creates human nature such that we learn: because of the large proportion of soul atoms that our body contains, we notice accidents in nature, seeing particular historical causes that we connect to effects, and we naturally generalize from these particulars to come up with plans for the future.*<sup>199</sup> *The environment, including other people, inevitably leaves an impression on primitive man, individually and collectively, changing his initial animal shape.*

*As a result of his natural and necessary habit of learning, Democritean man*

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196 Democritus appears to regard at least some of the most primitive animal emotions (shared by humans) as irrational, e.g. when he refers to coitus as a kind of epilepsy: μικρὰν ἐπιληψίαν τὴν συνουσίαν ὁ Ἀβδηρίτης ἔλεγεν (Clem. *Paed.* 1.94 = fr. 527 Luria).

197 Primitive human beings band together naturally and necessarily the same way animals and pebbles of a kind do in fr. 316 Luria. Plutarch preserves another very interesting Democritean fragment discussing the natural shape of collective human life: ὁ ἥλιος ἀνασχών ... συνώρμησε τῷ φωτὶ τὰς πράξεις καὶ τὰς νοήσεις τὰς ἀπάντων, ὥς φησι Δημόκριτος νέα ἐφ' ἡμέρηι φρονέοντες ἄνθρωποι τῇ πρὸς ἀλλήλοισι ὀρμῇ καθάπερ ἀρτίματι συντόνῳ σπασθέντες ἄλλος ἀλλαχόθεν ἐπὶ τὰς πράξεις ἀνίστανται (*De lat. viv.* 5.1129e = fr. 511 Luria, DK68B158). The natural shape of the universe, marked here by the rising (and setting) of the sun, shapes human interaction, naturally drawing us together (as by a cord). The natural, animal society that this creates eventually gives rise to a civilized πόλις (as we learn to recognize and harmonize our animal shapes so that they function together harmoniously).

198 I imagine Democritean primitives stumbling upon the necessities of life the same way Democritus imagines the first mule-breeders stumbling upon an ass raping a mare (fr. 561 Luria). This is consonant with the picture of human cultural evolution in Diodorus and Lucretius, the two accounts that seem closest to Democritus (as he remains extant).

199 See frs. 561 and 682 Luria, along with the fragments discussed on pages 227-230 above.

*inevitably evolves social mores that add to and refine his innate animal instincts: he comes up with deliberate human rules to supplement (and civilize) animal instincts. Where his animal nature provides the protective instinct to kill all hostile animals, whether human or not, he comes up with νόμοι πάτριοι exempting some of them (e.g. those seeking sanctuary in a holy place).<sup>200</sup> Where his animal nature provides the procreative instinct to produce offspring, he adds the νομίζον that expects children to show gratitude to their parents.<sup>201</sup> Where his animal nature provides the curiosity that makes him look into the environment around him, he turns his observations of natural accidents—e.g. spiders weaving and repairing their webs, swallows constructing nests, songbirds singing, and asses raping mares—into deliberate human customs (civilized τέχναι that deliberately cultivate the recurrence of particular natural accidents whose outcomes strike human observers as favorable).<sup>202</sup>*

*In Democritean thought, there is a natural order to the change that human shape experiences from its origins to the present. The first habits (νομίζοντα, νόμοι, τέχναι) that human beings develop in successful societies are inevitably those associated with necessities (ἀνάγκαι, τὰ ἀναγκαῖα, τὰ ἀναγκαϊότερα): if primitive humans fail to learn how to protect themselves, how to acquire water and food, or how to procreate, then they do not survive long enough to form or (at any rate) hand down habits unnecessary for survival (e.g. music).<sup>203</sup> The former habits are heavily determined by necessity (since*

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200 See fr. 620-623 Luria, discussed on pages 185-186 above.

201 See fr. 562 Luria, discussed on pages 188-189, 236-239 above.

202 See fr. 559, 561 Luria.

203 See fr. 568, 646, 717, 723 Luria.



*humanity perishes without them: we must have some kind of food in order to live), while the latter are not (since they are not requisite for survival: we do not need any music in order to live). The latter arise from excess (ἐκ τοῦ περιεῦντος in fr. 568 Luria), as unnecessary but pleasant additions to the habits that minister directly to necessity. In this paradigm adopted by Democritus, human pleasure, individual and collective, becomes a significant αἰτία driving our cultural evolution: necessity creates mankind such that we naturally and necessarily seek the pleasure of survival (e.g. pleasure that comes from being protected, nourished, and procreating) as well as the pleasure incidental to survival (e.g. the pleasure that comes from music). Our animal shape, individual and collective, naturally and necessarily values pleasure in certain ways (in order that we may survive), and so our human shape, individual and collective, must value it as well.<sup>204</sup> This is the foundation of practical Democritean ethics, which addresses the nature of human pleasure and the proper way to cultivate it—how to pursue it (as of necessity we must) without deforming or destroying human shape (individual and collective) beyond hope of repair.<sup>205</sup>*

There are two essential conclusions to draw from this chapter. (1) Democritean *Kulturgeschichte* is not lost to scholarship. The summary above offers a large body of evidence for Democritus' well-developed ideas on the origin(s) and development of human culture. While it is not determinable (given the current state of the evidence) whether Democritus composed a single, continuous account of human cultural evolution

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204 ὅρος συμφόρων καὶ ἀσυμφόρων τέρψις καὶ ἀτερπία (Stob. 3.1.46 = fr. 734 Luria, DK68B188). See pages 248-252 above.

205 Remember that human life is precarious and fragile in fr. 646 Luria.

that traced its every development in an authoritative fashion, what evidence we possess strongly suggests that he consciously crafted a complex, coherent worldview (a Critical διάκοσμος) which informed his discussion(s) of human culture as it exists in the past, the present, and/or the future.<sup>206</sup> (2) As extant in the early atomist corpus, that worldview evinces a strong connection between early atomist physics and Democritean ethics: the physics create the worldview in which the ethics have meaning. Lacking the perspective afforded by that worldview, many scholars—e.g. Dyroff (1899), Zeller (1919-1923), Bailey (1928), Alfieri (1936), Stella (1947), Mesiano (1951), Barnes (1982), and Taylor (1967, 1999, 2007)—have denied the existence of any significant coherence between atomism and the Democritean ethical corpus. The chapter that follows will show where these moderns go wrong: it will offer an original interpretation of Democritus' ethics that improves the quality of our understanding more than any other reading to date<sup>207</sup> and that depends fundamentally on the worldview presumed by early atomist physics.

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206 The doxography ascribes several lost books to Democritus that might have contained such a narrative. These include the Μέγας διάκοσμος, the Μικρὸς διάκοσμος, the Περί ἀνθρώπου φύσις ἢ Περί σαρκός (Diog. 9.46 = fr. cxv Luria), and the Περί φύσεως κόσμου (Suda, s.v. Δημόκριτος = fr. cxvi Luria). Note that Thrasyllus (quoted by Diogenes) lists the Περί ἀνθρώπου φύσις ἢ Περί σαρκός as the second volume in a series of two: the title of its prequel is given as Περί φύσεως (perhaps an explanation of physical cosmology that the second volume developed to include human and animal life, i.e. σάρξ), which could be the same title that the Suda records as Περί φύσεως κόσμου.

207 Including those readings that (correctly) see coherence between early atomist physics and Democritean ethics, e.g. Natorp (1893), Reinhardt (1912), Uxkull-Gyllenband (1924), Vlastos (1945, 1946), Mugler (1959), Luria (1964), Cole (1967), Sassi (1978), Mueller (1980), Thrans (1986), and Warren (2002). Even though their interpretive instinct is correct, these readings miss the fact that Democritus works inside the Critical Tradition, and they all overlook important characteristics of his worldview (a Critical διάκοσμος) as it appears in the early atomist fragments and testimonia. Like the scholars who deny any coherence between early atomist physics and Democritean ethics, those who assert coherence lack the perspective that sees Democritus as a Critical thinker. This study remedies that defect.

## CHAPTER 4. HAPPY POVERTY: A NEW INTERPRETATION OF DEMOCRITEAN ETHICS

### Seeing Past the Straw Man of the Epicureans (4.1)

The previous chapters have articulated an original approach to understanding Democritean ethics, an approach that aims (as others before it) to see what the atomist was trying to say in the ethical fragments that remain extant in the historical record. Before we interrogate those fragments more closely, investigating how Democritus finished building his atomist διάκοσμος on the foundation we have already discovered him creating, it is natural to wonder why others before us have failed to develop (or even missed entirely) some of the critical insights I have offered (and will yet offer). How does this study view the tradition of scholarship on Democritus? We are now in a good position to answer this important question explicitly.

Modern scholarship has not yet produced a unified vision of Democritus' ethical thought that all researchers accept as authoritative. The earliest modern researchers do not address the relationship between early atomist ethics and physics directly: they are more interested in deciding which fragments extant are genuine and then assigning these to titles in the Democritean oeuvre that seem most likely to trace their origin back to the atomist.<sup>1</sup> Though it offers valuable insights,<sup>2</sup> their work manifests a strong tendency to

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1 E.g. Lortzing (1873), Hirzel (1879). Hirzel anticipates the position taken by Warren (2002), in which early atomist ethics and physics are loosely (but uncritically and undefinably) related.

2 Hirzel (1879) remains a cogent, thorough guide to the relationship between Seneca's *De tranquillitate* and Democritus' *Περὶ εὐθυμίας*. The general tenor of his research (which notices marked similarities between the moral outlook of Seneca and that of Democritus) appears vindicated in later work: see Stewart (1958), which offers evidence for the possibility that Seneca's borrowings from Democritus owe something to Cynic middle-men.

obscure any original coherence between early atomist physics and ethics, since they are determined to attribute every saying of Democritus to a single title represented in the doxography: any saying that appears physical they derive from a single Democritean work assumed to treat physics (e.g. one of the books Thrasyllus lists among τὰ φυσικά), while all sayings deemed ethical they derive from attested ethical titles (e.g. the books that Thrasyllus catalogues among τὰ ἠθικά).<sup>3</sup> The naïve partition that results between physical and ethical doctrines through this method is belied by the information gathered in the preceding chapters, which show that Democritus' ideas about ethics and physics cohere together very well as extant, even if we cannot point with definitive certainty toward any single tome in his vanished oeuvre as a source for all of them (though the best candidate for such an epitome of early atomism is probably the Μικρὸς διάκοσμος, which Thrasyllus names a physical work).

Later researchers have grappled explicitly with the relationship between early atomist physics and ethics. Some of them look into the Democritean ethical fragments and see coherence with early atomist physics (and I agree with this general conclusion, although they do not arrive at it the way I do).<sup>4</sup> Others do not (and I appreciate their reluctance, given that the case for unity in Democritean thought has not been argued in the best way possible, a situation that this study seeks to remedy).<sup>5</sup> Some say that there is no hope of coming down firmly on one side or the other (and while I acknowledge that

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3 Diog. 9. 46-47 = fr. cxv Luria.

4 E.g. Natorp (1893), Reinhardt (1912), Uxkull-Gyllenband (1924), Vlastos (1945, 1946), Mugler (1959), Luria (1964), Cole (1967), Sassi (1978), Mueller (1980), Thrans (1986), Warren (2002).

5 E.g. Dyroff (1899), Zeller (1919-1923), Bailey (1928), Alfieri (1936), Stella (1942), Mesiano (1951), Taylor (1967, 1999, 2007).

the divergence among published opinions makes this a viable judgement, I do not agree that our evidence favors both sides of the discussion equally: to me it seems demonstrable that Democritus most likely treated physics and ethics as part and parcel of the same overarching worldview—the early atomist διάκοσμος whose foundations I have set forth in the preceding chapters).<sup>6</sup> All approaches to date that I am aware of have missed the existence and significance of the Critical διάκοσμος, which emerges as the chief contribution of this study. Why? If the perspective adopted by this study is correct (as I believe), why should it escape the notice of scholarship for so long (with more than a century separating my work from that of pioneers like Natorp and Dyroff)? The most likely answer to this question that I can find lies in the past, specifically in atomism as it was re-imagined by Epicurus and/or his followers (though they do not appear to be solely responsible, as we will see).

Epicurus (341-270 BCE) borrowed much of his atomist outlook on the world from Democritus,<sup>7</sup> but he also added various innovations of his own (e.g. the perspective on language that sees a natural connection inherent between word and referent where Democritus sees only an accidental one<sup>8</sup>). The most famous of Epicurus' innovations is

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6 Thus Warren (2002), who decides to treat Democritean ethics and physics as loosely coherent without attempting to define their relationship dogmatically. Others—e.g. Colvin (1974), Procopé (1989, 1990), Lanzillota (2001)—avoid the problem by dealing solely with the ethical fragments, leaving the physics entirely out of their scholarship. As a practical way to study the ethics without getting bogged down in arguments over how the physics might or might not be involved, this approach has proven quite useful. Still, it obscures the ancient message of the fragments, importing alien discontinuities between physics and ethics into the seamless unity between these two that is characteristic of the Critical διάκοσμος (as we see clearly in chapters 1-2 above).

7 We have already encountered the famous judgement of Cicero, that Democritus was *vir magnus in primis cuius fontibus Epicurus hortulos suos inrigavit* (*De nat. deor.* 1.43.120 = Democritus, fr. xcvi Luria, fr. 172c Taylor, fr. A74 DK). This judgement is corroborated abundantly in the historical record: see fr. xcvi-cvi Luria.

8 See pages 254-264 above. This difference between Epicurus and Democritus is particularly interesting

undoubtedly *the swerve*, an addition to traditional atomist physics whose function was to make indeterminacy a formal, explicit part of the atomist worldview (at its most fundamental level: where Leucippus and Democritus build the multiverse from atoms, void, and necessity, Epicurus ends up building it from atoms, void, and the swerve). It is unfortunate that no explicit explanation of the swerve survives in the extant fragments of Epicurus' written oeuvre.<sup>9</sup> Nevertheless, his ancient students offer valuable insight into what their master accomplished with the swerve, insight that tallies well with what little remains of Epicurus' own words close to this subject. Consider the following exempla:

TEXT ( <i>text</i> )	TRANSLATION ( <i>translator</i> )
(a) οὐ γὰρ ἀθροισμὸν δεῖ μόνον γενέσθαι οὐδὲ δῖνον ἐν ᾧ ἐνδέχεται κόσμον γίνεσθαι κενῶι κατὰ τὸ δοξαζόμενον ἐξ ἀνάγκης, αὕξεσθαί τε, ἕως ἂν ἑτέρωι προσκούσῃ, καθάπερ τῶν φυσικῶν καλουμένων φησί τις. τοῦτο γὰρ μαχόμενόν ἐστι τοῖς φαινομένοις. ( <i>Bailey [1926]</i> )	Denn es genügt nicht nur, daß eine Ansammlung stattfindet oder einfach ein Wirbel im Leeren, in welchem dann ein Kosmos entsteht auf Grund von Notwendigkeit, wie man meint, und in dem er wächst, bis er mit einem anderen zusammenstößt, wie einer der sogenannten Naturphilosophen meint. Denn dies widerspricht den Phänomenen. ( <i>Gigon</i> )  Epicur. <i>Epist.</i> 2.90

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in light of the discussion that follows in this section. Even though Epicurus appears below (e.g. in the writings of Diogenes Oenoandensis cited *infra*) as the champion of indeterminism against Democritean determinism, his perspective on language is more deterministic than that of his predecessor. This is just another clue that those who paint Democritus as a hard determinist miss something important in his work. Why would the early atomist make the connection between word and referent arbitrary and accidental if he didn't believe in the possibility of arbitrary, accidental events (as part of nature or necessity)? Readers like Diogenes Oenoandensis (and Epicurus, to the extent that Diogenes accurately reflects his viewpoint) have to make Democritus an absent-minded idiot—thus Barnes (1982, 535)—in order to reconcile his supposed denial of all indeterminacy (as a physicist) with his persistent, attested affirmation of indeterminacy (as a linguist, a biologist, a cultural historian, and a moralist).

<sup>9</sup> Time has been kinder to the writings of Epicurus than those of Democritus, but even so the larger part of the later atomist's extensive oeuvre has perished.

<p>(b<sub>1</sub>) [τὰ δ]ὲ [πρῶτα σώματα, ἃ κ]αὶ στοι[χεῖα προ]σαγορ[ε]ύεται, ἐξ ἀρ[χης] μὲν ὑφεστηκότα [καὶ ὄ]ντα ἄφθαρτα, γεννῶν[τα δὲ] τὰ πράγματα, τίνα [ἐστίν], παραθήσομεν προ[διαλ]υσάμενοι τὰς ἐτέ[ρων] δόξας ... Δημόκριτος δὲ ὁ Ἀβδηρείτης εἶπε μὲν ἀτόμους φύσεις, καλῶς γε ποιῶν ἐπεὶ δὲ περὶ αὐτῶν ἐσφάλη τινά, ἐν ταῖς ἡμετέραις δόξαις ἐπισκεφθήσεται. (Smith [1993])</p>	<p>And we will explain the nature of those entities which are called the elements of things, existing as they do from the beginning and being indestructible and yet productive of things; but first we will dispose of the opinions of others ... Democritus of Abdera did well to speak of 'indivisible natures', but since he went wrong about them in certain respects he will be considered among our opinions. (Chilton)</p> <p>Diog. Oenoand. fr. 6, coll. 1-3 Smith = fr. 5, coll. 1-3 Chilton</p>
<p>(b<sub>2</sub>) ἐσφάλη δ' ἀναξίως ἑαυτοῦ καὶ Δημόκριτος, τὰς ἀτόμους μόνας κατ' ἀλήθειαν εἰπὼν ὑπάρχειν ἐν τοῖς οὓσι, τὰ δὲ λοιπὰ νομιστὶ ἅπαντα. κατὰ γὰρ τὸν σὸν λόγον, ὧς Δημόκριτε, οὐχ ὅπως τὸ ἀληθὲς εὐρεῖν, ἀλλ' οὐδὲ ζῆν δυνησόμεθα, μήτε τὸ πῦρ φυλαττόμενοι [μήτε τ]ὴν σφαγὴν μήτ' [ἄλλην τινὰ δύνα]μι[ν] (Smith [1993])</p>	<p>But Democritus also made a mistake unworthy of himself when he said that only the atoms really exist in objects, all the rest merely existing by convention. For according to your argument, Democritus, far from discovering the truth we shall not even be able to live, being unable to guard ourselves either against fire or slaughter or ... (Chilton)</p> <p>Diog. Oenoand. fr. 7, coll. 2-3 Smith = fr. 6, coll. 2-3 Chilton</p>
<p>(b<sub>3</sub>) ἂν γὰρ[ρ] τῷ Δημοκρίτου τις χ[ρ]ή-σεται λόγῳ, μηδεμίαν μὲν ἐλευθέραν [φ]άσκων ταῖς ἀτόμ[οι]ς κίνησιν εἶναι διὰ τὴν πρὸς ἀλλήλας σύ[ν]κρουσιν αὐτῶν, ἔνθεν δὲ φαίνεσθαι κατ[η]γανκασμένως πᾶ[ν]τα κεινεῖσθαι, φή[σομ]εν πρὸς αὐτόν, ὧς «οὐκ οἶδας, ὅστις ποτὲ εἶ, καὶ ἐλευθέραν τινὰ ἐν ταῖς ἀτόμοις κίνησιν εἶναι, ἥ[ν] Δημόκριτος μὲν οὐχ εὔρεν, Ἐπίκουρος δὲ εἰς φῶς ἤγαγεν, παρεν-κλιτικὴν ὑπάρχουσαν, ὡς ἐκ τῶν φαινομένων δείκνυσιν;» τὸ δὲ μέγιστον: πιστευθείσης γὰρ εἰμαρμένης αἴρεται πᾶσα</p>	<p>If someone makes use of the theory of Democritus, saying that there is no free movement for the atoms because of their collisions with one another, from which it is clear that all things are moved by necessity, we shall say to him, 'Do you not know, whoever you may be, that there <i>is</i> a kind of free movement in the atoms, which Democritus did not discover but which Epicurus brought to light, an inherent swerve, as he shows from the phenomena? The most important point is this: if destiny is believed in, all admonition and rebuke is</p>

<p>νουθεσ[ί]α καὶ ἐπιτείμησις καὶ τοὺς πονηροὺς [ἔξεστι δικαίως κολάζειν] (Smith [1993])</p>	<p>done away with, and not even evil-doers ... (Chilton)</p> <p>Diog. Oenoand. fr. 54, coll. 2-3 Smith = fr. 32, coll. 2-3 Chilton</p>
<p>(c<sub>1</sub>) <i>corpora cum deorsum rectum per inane feruntur / ponderibus propriis, incerto tempore ferme / incertisque locis spatio depellere paulum, / tantum quod momen mutatum dicere possis. / quod nisi declinare solerent, omnia deorsum, / imbris uti guttae, caderent per inane profundum, / nec foret offensus natus nec plaga creata / principiis: ita nil umquam natura creasset.</i> (Bailey)</p>	<p>When the atoms are being drawn down- ward through the void by their property of weight, at absolutely unpredictable times and places they deflect slightly from their straight course, to a degree that could be described as no more than a shift of move- ment. If they were not apt to swerve, all would fall downward through the un- fathomable void like drops of rain; no collisions between primary elements would occur, and no blows would be effected, with the result that nature would never have created anything. (Smith [1969])</p> <p>Lucr. 2.216-224</p>
<p>(c<sub>2</sub>) <i>denique si semper motus conectitur omnis / et vetere exoritur &lt;motu&gt; novus ordine certo / nec declinando faciunt primordia motus / principium quoddam quod fati foedera rumpat, / ex infinito ne causam causa sequatur, / libera per terras unde haec animantibus exstat, unde est haec, inquam, fatis avulsa voluntas / per quam progredimur quo ducit quemque voluntas, / declinamus item motus nec tempore certo / nec regione loci certa, sed ubi ipsa tulit mens?</i> (Bailey)</p>	<p>Moreover, if all movements are invariably interlinked, if new movement arises from the old in unalterable succession, if there is no atomic swerve to initiate movement that can annul the decrees of destiny and prevent the existence of an endless chain of causation, what is the source of this free will possessed by living creatures all over the earth? What, I ask, is the source of this power of will wrested from destiny, which enables each of us to advance where pleasure leads us, and to alter our movements not at a fixed time or place, but at the direction of our own minds? (Smith [1969])</p> <p>Lucr. 2.251-260</p>



<p>(c<sub>3</sub>) <i>quare in seminibus quoque idem fateare necessest, / esse aliam praeter plagas et pondera causam / motibus, unde haec est nobis innata potestas, / de nilo quoniam fieri nihil posse videmus. / pondus enim prohibet ne plagis omnia fiant / externa quasi vi. sed ne mens ipsa necessum / intestinum habeat cunctis in rebus agendis / et devicta quasi cogatur ferre patique, / id facit exiguum clinamen principiorum / nec regione loci certa nec tempore certo.</i> (Bailey)</p>	<p>Thus you are obliged to acknowledge that the seeds have the same ability, and that, besides blows and weight, they have another cause of motion from which this innate power of ours is derived, since we see that nothing can come into being from nothing. Weight ensures that all movements are not caused by blows, that is to say by external force. But the factor that saves the mind itself from being governed in all its actions by an internal necessity, and from being constrained to submit passively to its domination, is the minute swerve of the atoms at unpredictable places and times. (Smith [1969])</p> <p>Lucr. 2.284-293</p>
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Epicurus appears on record disagreeing explicitly with an unnamed Critical thinker<sup>10</sup> who explains our world as the result of a material vortex occurring in the void according to necessity (οὐ γὰρ ἀθροισμὸν δεῖ μόνον γενέσθαι οὐδὲ δῖνον ἐν ᾧ ἐνδέχεται κόσμον γίνεσθαι κενῶι κατὰ τὸ δοξαζόμενον ἐξ ἀνάγκης [a]). The obvious target for Epicurus' disapproval here is Democritus (see chapter 2), as other scholars have recognized,<sup>11</sup> and the bone that Epicurus picks with him is that his explanation of the κόσμος is at odds with certain φαινόμενα (a). Since Epicurus is an atomist, these φαινόμενα are presumably material events whose occurrence cannot be explained solely (μόνον) as resulting from atoms and void reacting according to necessity (ἀνάγκη). In other words, the early

10 καθάπερ τῶν φυσικῶν καλουμένων φησί τις (a). Like Aristotle (e.g. *De resp.* 4.471b30; *Metaph.* 986b14, 1005a34), Epicurus refers to Critical thinkers as φυσικοί (though he begrudges them that title, since he finds their idea of φύσις to be at odds with empirical reality, the φαινόμενα against which he sees them fighting). They explain nature unnaturally, by ignoring integral manifestations of it.

11 E.g. Bailey (1926), 285. Democritus is the most prolific author on record defending a Critical world-view like the one that Epicurus finds deficient, and his atomist narrative is the one that Epicurus ends up adopting and correcting to tell his own story of the natural order and mankind's place in it.

atomist idea that worlds arise from atoms, void, and necessity is incomplete. Some other ingredient has to be added to the right-thinking atomist's recipe for producing a κόσμος like the one we observe around us. What is that ingredient?

Judging from the testimony of Epicureans like Diogenes Oenoandensis and Lucretius,<sup>12</sup> Epicurus thinks that it is the random swerve of individual atoms: ἐλεύθερα τις ἐν ταῖς ἀτόμοις κείνησις ( $b_3$ ); *exiguum clinamen principiorum, nec regione loci certa nec tempore certo* ( $c_3$ ). The φαινόμενα saved by this swerve are moral choices, acts of human and animal will that show inherent indeterminacy<sup>13</sup>—unpredictable variability that Epicurus apparently found lacking in the worldview(s) of his predecessors. In brief, Epicurus indicts Democritus as an exponent of what this study calls *rigid determinism*.<sup>14</sup> From Epicurus' point of view, Democritus becomes complicit in an important mistake. Either he himself imagines the world as a place defined minutely and absolutely by rigid determinism, or at the very least he misleads others—τις in ( $b_3$ )—so that they imagine it this way.<sup>15</sup> Either way, the Democritean διάκοσμος becomes an unrealistic and immoral

12 Another relatively early and informative witness worth mentioning is Cicero, who refers to the swerve as *declinatio atomorum* in *De nat. deor.* 1.25.69: *Epicurus ... invenit quomodo necessitatem effugeret, quod videlicet Democritum fugerat: ait atomum cum pondere et gravitate directo deorsus feratur, declinare paululum. Sola declinatione atomorum liberam voluntatem servari dicit* (Epicurus, fr. 281 Usener; Democritus, fr. 38 Luria). See also the quotation from *De fato* that appears on page 297.

13 πιστευθείσης γὰρ εἰμαρμένης αἴρεται πᾶσα νουθεσ[ί]α καὶ ἐπιτείμησις καὶ οὐδὲ τοῦ πονηροῦς [ἔξεστι δικαίως κολάζειν] ( $b_3$ ); unde est haec, inquam, fati avulsa voluntas / per quam progredimur quo ducit quemque voluntas, / declinamus item motus nec tempore certo / nec regione loci certa, sed ubi ipsa tulit mens? ( $c_2$ ). We observe moral behavior to be free (thus Lucretius), and if it were not, then there would be no point in rewarding or punishing it (thus Diogenes). For the fact that acts of animal *voluntas* are included in the Epicurean formulation, see *Lucr.* 2.263-276.

14 See page 121 above. The position of Democritus or foolish Democriteans as understood by Epicurus looks something like this: *every atomic movement occurs as the inevitable, invariable result of previous atomic movements, meaning that every event in the history of the world is inevitable and invariable: it could never happen otherwise than it does.*

15 Close reading of the fragments of Epicurus' masterwork *Περὶ φύσεως* suggests that his immediate quarrel was not with Democritus directly (meaning that he did not necessarily reduce his predecessor to

place, a prison in which living beings find their moral agency blocked at every juncture by the chain of an inexorable, invariable material destiny—*foedera fati* in (c<sub>2</sub>)—until Epicurus invents the swerve to release them (and make the atomist worldview reflect φαινόμενα as they actually exist).<sup>16</sup>

Diogenes Oenoandensis makes the Epicurean case against early atomism especially clear. According to him, the student of Democritus cannot think of changing any kind of moral behavior, since his naively deterministic outlook on the world denies the existence of the indefinite variability that makes moral choices possible. He must burn himself or be killed (b<sub>2</sub>), if that is his material destiny, and criminals must commit their crimes, as that is theirs (b<sub>3</sub>). No amount of experience or learning will ever set the unfortunate pupil of Diogenes' idiotic Democritus free from the mistakes that his atoms are bound to make. If Diogenes is right, then Democritus should have written no ethical instructions at all: his physics make ethics utterly pointless (since they can never help us do anything that we are not already going to do anyway, given that we are absolutely predetermined by the fixed and invariable series of atomic collisions that have occurred and will occur throughout the history of our κόσμος). While it is certainly possible that

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the rigid determinist straw man portrayed by Diogenes in [b] here) but with some student(s) of the early atomist's thought. See Sedley in Macchiaroli (1983), 30-40. That said, Epicurus does not appear to have admired the early atomist much: he is remembered to have called him Ληρόκριτος, “nonsense-judger” (Diog. 10.8). This study challenges the rhetorical position taken by Epicurus (and his followers modern and ancient) by noting that it was not the original position of Democritus, that we have enough information now about the rhetorical environment of the early atomist to create a more sympathetic (and more coherent) portrait of him (and the relationship between material necessity and human moral freedom as he imagined it) than Epicureanism permits.

- 16 The swerve thus becomes the engine driving the Epicurean narrative of origin and development, playing the decisive cosmogonic role that the early atomists assigned to necessity: *quod nisi declinare solerent, omnia deorsum, / imbris uti guttae, caderent per inane profundum, / nec foret offensus natus nec plaga creata / principiis: ita nil umquam natura creasset* (c<sub>1</sub>).

some ancient people may have understood Democritus to be in truth the rigid determinist fool that Diogenes derides, this study has argued vigorously against accepting this reductive, polemical caricature uncritically as an accurate portrait. As a supplement to the arguments already offered,<sup>17</sup> I append here a few significant comments from a non-partisan ancient source familiar (at least to some extent) with the published work of both Democritus and Epicurus:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>my translations</i> )
<i>Hanc Epicurus rationem (sc. τὴν παρέγκλισιν) induxit ob eam rem, quod veritus est, ne, si semper atomus gravitate ferretur naturali ac necessaria, nihil liberum nobis esset, cum ita moveretur animus, ut atomorum motu cogeretur. Id Democritus, auctor atomorum, accipere maluit, necessitate omnia fieri, quam a corporibus individuus naturalis motus avellere.</i>	Epicurus introduced this idea (the swerve) for the following reason: he feared that if the atom were carried about always by its natural and necessary weight, there would be no freedom left for us, since our mind would be moved as the motion of atoms forced it. Democritus, the inventor of atoms, preferred to accept that all things happen because of necessity rather than strip natural motions away from individual material bodies.  Democritus, fr. 38 Luria = fr. 74b Taylor = Epicurus, fr. 281 Usener  Cic. <i>De fato</i> 23
<i>ideo enim ille summum bonum εὐθυμίαν et saepe ἄθαμβίαν appellat, id est animum terrore liberum. Sed haec etsi praeclare, nondum tamen perpolita; pauca enim neque ea ipsa enucleate ab hoc de virtute quidem dicta.</i>	Therefore Democritus calls the greatest good 'contentment' and often calls it 'absence of perturbation', meaning a mind free from dread. But even if he puts things brilliantly, nevertheless he does not polish them thoroughly, for indeed we have only a few words from him about virtue, and these are not uttered plainly.  Democritus, fr. A169 DK

<sup>17</sup> See chapter 2.2.1-2 above.

	= fr. 188a Taylor = fr. 741 Luria  Cic. <i>De fin.</i> 5.29.87-88
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In Cicero's eyes,<sup>18</sup> the difference between Epicurus and Democritus is rhetorical: trying to explain the same phenomena—the recursive cycles of physical life as manifest in the turning of the heavens and life-cycles of biological organisms—Epicurus constructs a narrative out of words like *liberum*, where Democritus prefers to speak of *necessitas*. Neither one denies the reality of actual experience. Democritus does not necessarily imagine that every movement in the universe is minutely determined (to the same precise degree, regardless of time and circumstance). Peering at the coming and going of matter in his environment—its alterations, transformations, and transmutations—he chooses a word like *order* to describe it, whereas Epicurus, coming later and from a very different rhetorical perspective, prefers something closer to *chaos*. Then, when the early atomist comes to describe the shape humanity finds in the order of matter, he speaks brilliantly, briefly, and enigmatically, where (to judge from testimonia) his successor appears to have been dull, prolix, and pedantic (laboring to clarify explicitly, in exhaustive detail, the sort of moral message that Democritus is content to leave implicit).

Cicero's commentary points to a very important insight that has been too long overlooked. The messages produced by either atomist, Democritus or Epicurus, are

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18 While some scholars might read Cicero to indicate here that the *naturales motus* of Democritus' atoms amount to rigid determinism, I do not. For reasons given in chapter 2.2.1-2 above, where I discuss the early atomist doctrine of material necessity as it appears throughout the historical record, I find it very unlikely that Democritus was a rigid determinist. Even if Cicero's text can be construed as affirming that he interpreted the atomist as a rigid determinist (a construction of Cicero's meaning that I would contest), this would not destroy my argument to the contrary in chapters 1-3 above, an argument which relies on more than just one brief (and somewhat ambiguous) comment from Cicero.

shaped by their rhetorical environment—the historical context in which they come to exist originally as something relevant and coherent. (i) Democritus speaks of indefinite, non-linear *order* because that is the language of the Critical Tradition: Critical thinkers present the διάκοσμος broadly as order, even as they recognize its inherent irregularities (later canonized by Epicurus as the swerve). Democritus' ethics appear brilliant, brief, and enigmatic because they come out of the same tradition that gives us Anaximander, Heraclitus, Parmenides, and Empedocles (to say nothing of Pythagoras). (ii) Meanwhile, Epicurus speaks of definite, linear *chaos* because his rhetorical environment is very different from that of Democritus. The Critical Tradition is not determinist in the strict sense: it does not separate moral freedom from material necessity absolutely and then deliberately prefer the latter. Nevertheless, by Epicurus' day Critical authorities are invoked as rigid determinists, advocates for material necessity against moral freedom. This fact explains the cylinder of Chrysippus (who must tame the rigid determinism now associated with Heraclitus)<sup>19</sup> and the swerve of Epicurus (who distances himself from the rigid determinist caricature of Democritus ridiculed by Diogenes Oenoandensis). As for Epicurus' ethics, they appear dull, prolix, and pedantic (especially when compared with ethical thought in the Critical Tradition) because these are the rhetorical qualities needed to compete on a level footing against Stoics, Peripatetics, and other newcomers vying for public favor. These historical observations seem obvious, and yet modern scholarship

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19 Cic. *De fat.* 42-43, Gell. *Noct. Att.* 7.2.11 = fr. 62C.8-9, 62D.4 in Long & Sedley (1987). Just like the Epicurean swerve, the Stoic cylinder invented by Chrysippus represents a linear, definite kind of *chaos* created to defeat the ghost of hard determinism that haunts the Critical Tradition after its heyday, as later thinkers, more linear and definitive in their outlook, learn to mistrust (and misinterpret) the non-linear rhetoric that their Critical predecessors use to describe (rather than define) indefinite *order*.

has persistently failed to distinguish Democritus the Critical thinker (who understands that every natural order involves some irregular variability and sees human ἦθος arising naturally out of material φύσις) from Democritus the Epicurean straw man (whose rigid determinist approach to φύσις makes any meaningful relationship between it and human ἦθος impossible).

The chief reason for the blindness of modern scholarship is historical, and quite forgivable: the entire Critical Tradition, Democritus included, survives only in scattered bits and pieces. Confronted with these remnants, the first task of scholarship was not to rush to a premature synthesis incorporating them all: instead, the first scholars put a great deal of necessary effort into identifying and classifying different testimonia relating to individual authors. Because the Critical Tradition contains a wide variety of disparate thought, imperfectly preserved, it is only recently that people have begun to talk meaningfully about the overarching similarities between its individual exponents that make it recognizably coherent as a unitary historical phenomenon (e.g. the likenesses between “Ionian” and “Italian” cosmogonies discussed in chapter 1 of this study).<sup>20</sup> Meanwhile, thanks to the hard work of the first modern scholars in this field, the fragments of Democritus have been extant in relative abundance (compared to other authors in the Critical tradition), demanding some kind of explanation. Lacking the

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20 E.g. Vlastos (1945, 1946), Sassi (1978), Naddaf (2005), Drozdek (2007). Contrast this sort of work with earlier synoptic treatments, e.g. the work of Diels (1879) or Zeller (1919-1923), which consider the Critical Tradition as competing individuals and schools (a perfectly valid perspective) and focus most productively on the differences that drive them apart rather than the similarities that bring them together. When the early moderns attempt to synthesize, they usually end up oversimplifying; their most useful insights atomize the Critical Tradition, individuating its exponents. This early trend toward atomization is turning now, as more useful syntheses become possible—syntheses that draw historical verisimilitude from the atomistic work of the early pioneers like Diels.

resources required to approach Democritus from the historical perspective taken by this study, earlier researchers necessarily confronted him from different historical outlooks. Inevitably, they approached him first as he appeared in the ancient sources that they already possessed intact, particularly Epicurean authors (whom historical accident has made the only really sympathetic standard-bearers for ancient atomism in the West). Thus, already in Natorp (1893), Democritus is presented primarily as a forerunner of later thinkers: where his ideas go matters more (because it is easier to see) than where they come from. Given this modern rhetorical bias in favor of telling the story most readily evident, it was inevitable that somebody make Democritus into the idiot derided by Diogenes Oenoandensis—a naïve fool who preaches rigid determinism (physics) and moral freedom (ethics) without noticing that they conflict, thereby giving the latecomer Epicurus a perfect rhetorical entrance onto the stage of ancient public life.

This Epicurean misreading of the early atomist is not entirely unattractive, particularly if we are ignorant of the Critical Tradition: it locates Democritus in a well-known ancient story, providing ready answers to obvious questions. Why don't the ethics and the physics of Democritus agree neatly and clearly with one another in the fragments extant? Why did Epicurus feel a need to set pen to paper (and at such great length), if Democritus had already published adequate, authoritative expositions of the atomist worldview? This study has offered some answers to these questions (in this chapter and in chapter 2.2.1), but my views are certainly not the only ones that make sense. Why assume that Epicurus and/or the rigid determinists against whom he and his partisans



argue misunderstand a source that they may know better (in more complete and coherent form) than we do? Lacking the background of a coherent Critical Tradition, almost all modern scholars who interpret the relationship between early atomist ethics and physics readily fall into the habit of interpreting Democritus as Epicureans. Thus, the tradition of modern scholarship tracing its lineage to Dyroff (1899)<sup>21</sup> discovers that Democritus treats physics and ethics schizophrenically, approaching material φύσις as a rigid determinist and human ἦθος as a champion of moral freedom—a blatant contradiction that practically demands the advent of an Epicurus<sup>22</sup>—while the tradition tracing its lineage to Natorp (1893)<sup>23</sup> advances non-schizophrenic readings of the relationship between early atomist φύσις and ἦθος that collapse into incoherence whenever their opponents point out that they have ignored the unbridgeable chasm between strict physical determinism and moral freedom. In this situation, the real insights that partisans on both sides have into the original Democritus inevitably get obscured.

An exemplary instance of the unhelpful Epicureanism in modern scholarship is the recent conversation that took place between Vlastos (1945, 1946, 1975) and Taylor (1967, 1999). It began when Vlastos discovered a strong physical subtext underpinning Democritus' ethical characterization of εὐθυμία. This insight remains valuable (and real: the ethical fragments frequently speak in ways that complement the physical ones, as we

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21 See note 5 above.

22 Mesiano (1951) offers an especially clear instance of this unfortunate trend in modern scholarship. After documenting in great detail the reality that Democritean ethics presume the existence and viability of moral will in animal life, he concludes, like a good Epicurean, that this is utterly incompatible with Democritean physics (presumed to be strictly deterministic): “la contraddizione tra la sua concezione filosofica generale e la sua etica rimane innegabile” (135).

23 See note 4 above.

have already seen in this study). Unfortunately, Vlastos phrased his discovery as an Epicurean would, in terms that make the early atomist sound like a rigid determinist.<sup>24</sup> Taylor came to Democritus' defense, correctly pointing out that the early atomist's ethics give the lie to rigid determinism. Taylor exonerated Democritus the ethicist of being a naïvely rigid determinist, but did so at the expense of denying the real insights that Vlastos uncovered—and he did nothing to unseat the Epicurean lie that early atomist physics embrace rigid determinism,<sup>25</sup> which Vlastos also left intact. What Vlastos stumbled upon was not a schizophrenic using words to mean one thing in physical works and another thing in ethical ones—i.e. the Democritus you will still see most clearly in Barnes (1982) and Taylor (1999)<sup>26</sup>—but a typical Critical thinker integrating physics (including animal biology and psychology) with ethics. This study affirms both Vlastos (*Democritus builds ethics from physics*) and Taylor (*Democritus does not write ethics as a rigid determinist*) in this particular quarrel—a feat that it achieves because it discovers a legitimate rhetorical position from which to cast doubt on the implicit Epicureanism (*Democritean physics are characterized by rigid determinism*) that still bedevils modern attempts to understand Democritus.<sup>27</sup>

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24 Correctly noting that Democritus defines human health and happiness in terms of κρῆσις (the proper mixture of atoms and void, in the language of the early atomists), Vlastos does not go on to show how the Critical conception of κρῆσις differs from rigid determinism. His 1975 republication does nothing to address Taylor (1967) at all.

25 Stella (1942), Mesiano (1951), and Taylor are all right when they observe that the ethical fragments of Democritus do not reveal rigid determinism: what they do not realize is that this kind of determinism is lacking from the physical fragments as well, until later readers (notably Epicureans) discover it there.

26 In his later work, Taylor (2007) continues to read Democritus schizophrenically, separating physical νόμος unnaturally from ethical, as though the word should have one meaning in early atomist ethics and another in early atomist physics (1-9). In fact, as this chapter will show, Democritus uses the word consistently throughout his extant corpus: the paradox that Taylor (2007) finds in the agreement between Democritean νόμος and φύσις is not really a paradox at all.

27 Others have pioneered the way here, noticing the coherence between Democritean ethics and physics

Whether this Epicureanism originates simply with Epicurus or not—as Sedley (1983) gives us some reason to doubt that it does<sup>28</sup>—is ultimately irrelevant. The take-away message from this section is that Democritus approaches the world from a rhetorical outlook in which there is no obvious dichotomy between material necessity and moral freedom. The opposition of these two abstractions arises after him, as a later historical reaction to work like his. Interesting as this opposition may be from certain historical standpoints, it will not be part of Democritus' work as he composed it: it will not give us clear insight into the original δῖάκοσμος imagined by the early atomists. The task of the modern reader of the fragments is to see the sense of Democritus where later generations see only the nonsense of Epicurus. Today, thanks to the work of many scholars who have enabled us to investigate and understand the Critical Tradition, this is more possible than it has ever been (at least since the original works of Democritus were lost to history). It is my contention that that Tradition offers the best available lens through which to view the early atomists' world-building project. It is not the only lens, and there will always be others that offer valuable information, but when it comes to deciphering the message(s) originally encoded in the fragments of Democritus, it seems clear to me that the most useful comparanda will always be texts and/or pieces of texts that come from the historical milieux closest (chronologically and ideologically) to the

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and attempting to make sense of it (see note 4 above), but my study is the first that explains the entire early atomist corpus, physics and ethics, as a legacy of the Critical Tradition. Though Vlastos (1946, 63-64) anticipates me in acknowledging the existence of what this study calls the Critical Tradition, his position fails to recognize the fact that early atomism (like the Critical Tradition) does not explicitly embrace hard determinism. It would not be wrong to regard my study as the Natorpian answer that Dyroffian Taylor (1999) expected (in vain) from Vlastos.

28 See note 15 above.

early atomist and sound most like him (as he remains extant). That other scholars have missed this approach is not surprising (many of them did their work in a world where it was still practically impossible) and does not make their work useless, just incomplete (particularly if your goal is to understand the original meaning of early atomism).<sup>29</sup>

I prefer integration to schizophrenia when it comes to interpreting Democritus, favoring Natorp and his followers (particularly Vlastos<sup>30</sup>) over Dyroff and his, while recognizing that both schools offer valuable insights, insights that hitherto fail to coincide in objective consensus because everyone ignores the Critical Tradition and rather naively reads Epicurean polemics against Democritus as substantially accurate representations of early atomist physics as its originators imagined it. If I succeed in my aim here, the impasse between Natorpian and Dyroffian positions will dissipate (and maybe even disappear) in future,<sup>31</sup> as scholars become more familiar with Democritus (as extant in all his fragments, not just a few famous ones) and with his historical milieu (as distinct from later milieux in which his work held different significance, including the milieux of Epicurus and his followers).

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29 This judgement holds true for modern approaches to Democritean ethics that simply ignore the physics (and rigid determinism), as well—e.g. Colvin (1974), Procopé (1989, 1990), Lanzillota (2007). Useful as these approaches unquestionably are, they nevertheless studiously avoid confronting the obvious clues followed by researchers like Vlastos and Sassi (1978), ceding the field to the Epicureans where it does not need to be ceded (any longer).

30 It would not be wrong to see me as playing Epicurus to Vlastos' Democritus, confirming and clarifying at pedantic length the insights that Vlastos expressed briefly (and problematically, since he left the early atomist unduly vulnerable to being characterized as a rigid determinist and/or a schizophrenic).

31 The compromising position adopted by Warren (2002)—that there is insufficient textual evidence to decide the question in favor of Natorp's or Dyroff's disciples—is unduly negative. The evidence for Natorpian integration against Dyroffian schizophrenia is stronger than he notices, since he does not consider the Critical Tradition (or even the full corpus of Democritus' physical fragments: like most who study the early atomist, he appears content not to contest the historical correctness of Epicurus' critique of Democritean physics, ignoring or writing off problematic testimonia that this study discusses in chapter 2.2.1-2).

## **A New Reading of Democritean Ethical Theory: Cultivating Good Habits (4.2)**

Throughout this study (e.g. chapter 2.2.1-2 and section 4.1 above), I have argued that the Critical rhetorical outlook on the world adopted by Democritus does not see an unbridgeable chasm between physical determinism (physics) and human moral agency (ethics)—that that chasm is a later historical development in atomism, a mistake “healed” by the Epicurean swerve, which necessarily validates the anachronistic (mis)reading of early atomism that it exists to correct. If Democritus does not see human moral agency existing in opposition to strict physical determinism (whereby natural laws minutely dictate organic responses to stimuli by individual organisms), the question naturally arises: *how does Democritus understand human moral agency?* It is time to answer this question by delving deeper into the corpus of ethical thought attributed to Democritus.

We have already noticed that Democritus sees our world existing as a dynamic combination of atoms and void—a διάκοσμος that experiences birth, maturation, ἀκμή, decline, and death (dissolution into the chaos of atoms and void that exists infinitely and eternally outside every temporary orderly arrangement). Within a διάκοσμος like ours—one temporal order out of infinitely many others existing prior to it, contemporary with it, and after it—atoms and void combine to form temporary shapes (ῥυσμοί), including organic shapes like the one we refer to as *man* (ἄνθρωπος). These shapes go through vicissitudes that are determined by necessity (ἀνάγκη) generally but not particularly: e.g. necessity dictates that human shapes will always die, but it does not determine precisely or predictably how each and every individual (or group of individuals) will find death.

Within the boundaries fixed by necessity, human shape is indeterminate and plastic: it can live in a variety of different habitats, cultivate a variety of different habits, and experience a wide range of different vicissitudes resulting from particular circumstances invisible and unpredictable to the outside observer.<sup>32</sup> Confronting this reality as a cultural historian (above in chapter 3.2), Democritus imagines human behavior (ethics) evolving naturally out of animal biology (physics): primitive man turns instinctive, unpremeditated reactions to accidental circumstances into deliberate moral habits (νόμοι).<sup>33</sup> The νόμοι that people invent in this fashion are not created equal: (i) some are necessary for human survival (e.g. the arts that produce food); (ii) others are not (e.g. music). Implicit here is a basic program for judging ethical decisions: the wise moralist must on no account lose touch with the νόμοι (i) necessary to human survival. He must never cultivate νόμος (ii) at the expense of νόμος (i). The programmatic question that arises naturally from Democritean ethics (as discussed thus far), then, may be put as follows: *how do people cultivate good habits—i.e. νόμοι (i) and νόμοι (ii) that do not endanger human survival by undercutting νόμοι (i) unnecessarily?* The Democritean corpus offers practical, reasonable answers to

32 See chapter 2.2.1 above, in particular the discussion(s) of DK68B165 and fr. 103, 316 Luria.

33 E.g. when he creates a conscious habit of parenting out of his untaught animal desire for offspring. For more examples, see chapter 3.2 above. Notice that there is no categorical distinction evident in Democritean thought between ethical νόμος and physical, *pace* what scholars like Taylor (2007) say about the historical opposition between νόμος and φύσις. From the perspective of the early atomists (and of the Critical Tradition in general), this opposition is never absolute. Nature (φύσις) produces animals, including human beings, that develop moral habits (νόμοι) naturally (i.e. physically, as expressions of φύσις). Observation may show that some of these habits are more plastic than others—the habit of reproducing with members of the same species may be more plastic than the habit of recognizing certain colors (compare fr. 561 Luria, quoted above on page 190, with fr. 51, 55, 79, 90, 93, 382 Luria, quoted above on pages 133-145)—but that does not change the fact that all animal habits are natural and naturally malleable (altering in synchrony with the underlying physical nature of the animal exhibiting them), and Democritus designates all of them—unproblematically and unparadoxically—with the same word νόμος. It is only from outside the Critical Tradition that Democritus' refusal to separate physics and ethics appears odd.

this question, answers that will ultimately shed light on our original question (*how does Democritus understand human moral agency?*).

#### **How Education Occurs (4.2.1)**

Purveyors of moral wisdom ancient and modern are often accused of incoherence and/or banality—not without reason, since making generic normative statements about something as particular and indeterminate as everyday human life exposes would-be moral instructors to notable risks: on the one hand, their advice may be overly particular, mistaking inconsequential details of a specific circumstance for universally meaningful information; on the other, it may be too general and universal to be particularly useful—a very common vice in ancient wisdom literature.<sup>34</sup> Add to this generic difficulty inherent in *Morallehre* the particularly poor preservation of the published Democritean corpus and the witness of Cicero that the atomist did not write clearly about virtue,<sup>35</sup> and it comes as no surprise that some modern scholars have opted to dismiss early atomist ethics as irredeemably garbled (in our current texts as perhaps even in the putative originals) and/or inconsequential (a poor foretaste of better things to come in the work of later thinkers to whom history has been kinder).<sup>36</sup> Such assessments of Democritean

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34 A. E. Housman (1883) parodies this kind of wisdom literature aptly, e.g. “O my son, be on the one hand good, / And do not on the other hand be bad.” Any idiot can get the generic rhetorical distinction between *good* and *bad* right; the problem is knowing where it lies in particular circumstances (e.g. when deciding whether to avenge the murder of one's father by killing one's mother). Ignoring this point, much wisdom literature ends up sounding like the imaginary basketball coach who foregoes all strategy and naively advises his team to win the game, as though life were that simple.

35 *Sed haec etsi praeclare, nondum tamen perpolitata; pauca enim neque ea ipsa enucleate ab hoc de virtute quidem dicta* (*De fin.* 5.29.87-88 = fr. 741 Luria, quoted in full on page 297 above).

36 See e.g. Bailey (1928): “Democritus' 'ethic' hardly amounts to a moral theory: there is no effort to set the picture of the 'cheerful' man on a firm philosophical basis or to link it up in any way with the physical system; he is content in a discursive manner to draw a portrait. Epicurus' theory is much deeper and broader than this” (522). Also Procopé (1989): “Scholars have tended to steer clear of ... Democritus' *fragmenta moralia* in general, for understandable reasons. The fragments are not what one

ethics are belied by extant fragments that show clear evidence of careful thought (that appears notably congruent with the rest of the early atomist corpus). As they remain extant, Democritus' description(s) of and prescription(s) for the human condition appear cogent and consistent—agreeing closely with the early atomist διάκοσμος and showing that that worldview was not transparently impractical (giving the lie to Epicurean assertions that it denies and/or egregiously distorts empirical reality).

*How do people cultivate good habits?* In order to develop good habits, people must first have habits. In the early atomist διάκοσμος, habits (νόμοι) are temporary, circumstantial expressions of temporary, mutable shapes (ῥυθμοί). As we have already noticed, these habits—while variable—are not equally variable: (i) some appear essential to the integrity of the shape that expresses them (as eating is essential to the integrity of the human shape); (ii) others appear accidental to the integrity of the shape that expresses them (as music is accidental to the integrity of the human shape). Successful ethical adaptation is about learning to express both kinds of habit (as all shapes do)<sup>37</sup> without losing track of the first one: the human shape that retains its integrity best is the one that does not become so obsessed with music that it forgets to eat. Here it becomes necessary to confront (one more time) the rigid determinist (mis)reading of early atomist theory, a (mis)reading which presumes that Democritean necessity demands that the evolution of all temporary shapes (including human beings) be absolutely predetermined, such that

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would expect from the great precursor of Epicurus. They have little to connect them at all obviously with atomism. Unoriginal, often commonplace in content, they also contain disturbing intimations—some would say 'echoes'—of doctrines associated with later thinkers” (307).

37 Even the individual atoms in Democritus' multiverse have integral qualities (e.g. their shape) and non-integral qualities (e.g. their orientation), mirroring the integral and non-integral habits that their compounds have: see page 112 above, and Taylor (1999), 71-94, 109 n. 100, 112-124, 233.



there is no such thing as deliberately cultivating a good habit in place of a bad one.

First, it is important to note that this (mis)reading is not entirely without foundation in the early atomist corpus. It is clear that Democritus envisions the human shape whose moral habits concern us existing within certain limits. Its plasticity in any historical instance (or series of instances) is not infinite:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
(a) γινώσκειν χρεῶν ἀνθρωπίνην βιοτὴν ἀφαιρήν τε ἐοῦσαν καὶ ὀλιγοχρόνιον πολλῆσι τε κηροῖ συμπεφυρμένην καὶ ἀμηχανίῃσιν, ὅπως ἂν τις μετρίης τε κτήσιος ἐπιμέληται καὶ μετρήται ἐπὶ τοῖς ἀναγκαίοις ἢ ταλαιπωρίῃ.	Bisogna prendere consapevolezza della fragilità e della brevità della vita umana, che si rivela anche intessuta di molteplici sciagure e bisogni, in modo da curarsi di avere beni di proprietà misurati e da commisurare le tribolazioni inevitabili alle necessità vitali. ( <i>Luria, Krivushina</i> )  Democritus, fr. B285 DK = fr. D150 Taylor = fr. 646 Luria  Stob. 4.34.65
(b <sub>1</sub> ) σημείον δ' ὡς οὐκ εἰσὶ φύσει τὸ μὴ ταῦτα πᾶσι φαίνεσθαι τοῖς ζώοις ἀλλ' ὃ ἡμῖν γλυκύ, τοῦτ' ἄλλοις πικρὸν καὶ ἑτέροις ὀξύ καὶ ἄλλοις δριμύ τοῖς δὲ στρυφνὸν καὶ τὰ ἄλλα δ' ὡσαύτως. ἔτι δ' αὐτοὺς μεταβάλλειν τῇ κήσει κατὰ τὰ πάθη καὶ τὰς ἡλικίας ἧ καὶ φανερόν ὡς ἡ διάθεσις αἰτία τῆς φαντασίας. ( <i>Diels</i> )	Proof that <the sensory qualities> are not objectively real is found in the fact that they do not appear the same to all creatures: what is sweet to us is bitter to others, and still to others it is sour or pungent or astringent; and similarly of the other <sensory qualities>. Moreover Democritus holds that 'men vary in their composition' according to their condition and age; whence it is evident that a man's physical state accounts for his inner presentation. <sup>38</sup> ( <i>Stratton, adapted</i> )  Democritus, fr. A135 DK = fr. 113 Taylor

38 For more discussion of this and similar testimonia, see chapter 2.3 above.

	<p>= fr. 441 Luria</p> <p>Theophr. <i>De sens.</i> 63-64</p>
<p>(b<sub>2</sub>) περὶ δὲ τοῦ φρονεῖν ἐπὶ τοσοῦτον εἶρηκεν ὅτι γίνεται συμμέτρως ἐχούσης τῆς ψυχῆς κατὰ τὴν κρῆσιν· ἐὰν δὲ περίθερμός τις ἢ περίψυχρος γένηται, μεταλλάττειν φησί. δι' ὃ τι καὶ τοὺς παλαιοὺς καλῶς τοῦθ' ὑπολαβεῖν ὅτι ἐστὶν ἄλλοφρονεῖν. ὥστε φανερόν, ὅτι τῇ κράσει τοῦ σώματος ποιεῖ τὸ φρονεῖν, ὅπερ ἴσως αὐτῷ καὶ κατὰ λόγον ἐστί, σώμα ποιοῦντι τὴν ψυχὴν.</p>	<p>Concerning thought, Democritus says merely that “it arises when the soul's composition is duly proportioned.” But if one becomes excessively hot or cold, he says, thinking is transformed; and it was for some such reason, the ancients well believed, that the mind became “deranged.” Thus it is clear that he explains thought by the composition of the body—a view perhaps not unreasonable in one who regards the soul itself as corporeal. (<i>Stratton</i>)</p> <p>Democritus, fr. A135 DK  = fr. 113 Taylor  = fr. 460 Luria</p> <p>Theophr. <i>De Sensu</i> 58</p>
<p>(c) Δημόκριτος μὲν γὰρ εὔχεσθαι φησι δεῖν, ὅπως εὐλόγχων εἰδώλων τυγχάνωμεν, καὶ τὰ σύμφυλα καὶ τὰ χρηστὰ μᾶλλον ἡμῖν ἐκ τοῦ περιέχοντος ἢ τὰ φαῦλα καὶ τὰ σκαιὰ συμφέρηται.</p>	<p>Democritus says we must pray that we meet with propitious images and that our environment brings us congenial and good images rather than mean and harmful ones.<sup>39</sup> (<i>my translation</i>)</p> <p>Democritus, fr. 472a Luria</p> <p>Plut. <i>Aem.</i> 1.4</p>

Fragments like these offer a window onto the limitations inherent in human shape as imagined by Democritus. Generically speaking, humanity is temporal and mortal (a). The atoms that make it up in particular instances react with other atoms around it (in a particular environment) to produce various particular sensory qualities (b<sub>1</sub>)—including

39 This fragment is just one of several extant that discuss the effect of the environment on human shape (individual and collective). See also frs. 49, 472a (other testimonia), 476, 579 Luria, which are quoted above on pages 227-240.

the one known as thought (b<sub>2</sub>)—which become the basis for all behavior (including the kind of behavior that recurs). Interaction between human atoms and atoms in the human environment(s) produces human habits, molding individual and collective human shape over time. Humanity can hope that the reaction between itself and its environment yields good results in particular instances (c), but it cannot escape the fact that its experience is always limited (determined) by its general mortality (*all men die, no matter what sensory qualities they experience en route to death*) and the specific environmental circumstances that accompany particular manifestations of that mortality (*all men die as a result of material circumstances in their vicinity acting upon their mortality: if my circumstances do not offer one occasion for death, they offer another, such that no matter what happens I always die*). Some (e.g. Epicureans) read fragments like these—fragments that discuss the limits of human moral freedom—and see Democritus' human shape as a helpless puppet responding automatically and non-stochastically to its environment, which is itself merely the puppet of a totalitarian, non-random material necessity.<sup>40</sup>

In the mind of these readers, Democritus' careless formulation of the generic truth that humanity must die commits him to a rhetorical position that makes it impossible for humanity to live: human volition becomes an illusion, since it is merely one in a long series of atomic collisions whose relationship is presumed to be linear—such that the first

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40 From this point of view, Democritus sees human beings as just another instance of the Cartesian *bête-machine* as it is commonly imagined—viz. a non-stochastic mechanism for converting environmental stimuli linearly into behavior (such that every animal motion arises as the inevitable outcome of some prior environmental motion demanding it more or less absolutely). See Cottingham (1978). While it is true that Democritus does become an important figure in the history of this kind of rigid deterministic argument (later students of the Critical Tradition do turn it into a fount for rigid determinism), it is not historically accurate to regard him as consciously building a view of the world that presumes linearity (transparent causation), as the succeeding discussion will demonstrate.

collision minutely predetermines the last in the linear series of collisions defining the birth, maturation, ἀκμή, decline, and death of a particular κόσμος. (Recall the Epicurean arguments cited in 4.1 above, in particular the damning summation offered by Diogenes Oenoandensis.) This reading of Democritus' position, while not utterly unreasonable or inconsistent with itself, is undercut by extant testimonia.<sup>41</sup> Though he sees human moral freedom as limited, Democritus does not deny its existence:

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
(d <sub>1</sub> ) ἡ φύσις καὶ ἡ διδαχὴ παραπλήσιόν ἐστι. καὶ γὰρ ἡ διδαχὴ μεταρυσμοῖ τὸν ἄνθρωπον, μεταρυσμοῦσα δὲ φυσιοποιεῖ ( <i>Taylor</i> )	Nature and teaching are similar, for teaching reshapes the man, and in reshaping makes his nature. ( <i>Taylor</i> )  Democritus, fr. B33 DK = fr. D28 Taylor = fr. 682 Luria  Clem. <i>Strom.</i> 4.151; Stob. 2.31.65; Theodoret. 4.1, p. 100 Räder
(d <sub>2</sub> ) ἀφ' ὧν ἡμῖν τὰγαθὰ γίγνεται, ἀπὸ τῶν αὐτῶν τούτων καὶ τὰ κακὰ ἐπαυρισκοίμεθ' ἄν, τῶν τε κακῶν ἐκτὸς εἴημεν. αὐτίκα ὕδωρ βαθὺ εἰς πολλὰ χρήσιμον καὶ δαῦτε κακόν· κίνδυνος γὰρ ἀποπνιγῆναι. μηχανὴ οὖν εὐρέθη, νήχεσθαι διδάσκειν. ( <i>Luria</i> )	From the very same things as benefit us we may also get evils, and escape from evils. For example, deep water is useful for many things, and then again bad; for there is danger of drowning. So a remedy has been discovered, teaching people to swim. ( <i>Taylor</i> )  Democritus, fr. B172 DK = fr. D37 Taylor = fr. 33 Luria  Stob. 2.9.1

<sup>41</sup> See chapters 2.2 and 4.1 above.

If Democritus were the fool derided by Epicureans, he should not imagine that teaching (διδασχί) is significant ( $d_1$ ). He should not believe in the human ability to invent and impart (διδάσκειν) remedies (μηχαναί) for invariable material necessity ( $d_2$ ). How can one teach anything meaningful in a world where the human shapes predetermined to be misshapen must be so (as Diogenes Oenoandensis argues)? How can anyone invent remedies for the inevitable? Here those committed to an Epicurean understanding of Democritus throw up their hands and condemn the early atomist for failing to consider that his physical outlook makes the world too regular, denying the irregularity observable in human life. How can the perfect order of linear, non-stochastic atomic collisions give rise to non-linear, stochastic human morality? It cannot.

Unfortunately for those who make this dilemma an original flaw in Democritean atomism, nothing in the extant atomist corpus suggests that Democritus imagined atomic motion as linear and non-stochastic (as those who make him into a rigid determinist inevitably assume). In simple terms, Democritus does not seem to imagine material necessity operating within closed, linear systems (with fixed components whose mutual relationships develop uniformly from beginning to ἀκμή to end without any element of non-linear uncertainty). The early atomist multiverse is not a closed system, nor is it a breeding ground for closed systems. It has no limits in space and time. Occupying infinite void, it incorporates an infinite number of atoms that manifest an infinite variety of shapes.<sup>42</sup> Even if the collective motion of these atoms shows some regularity in the

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<sup>42</sup> See chapter 2.1-2.

existence of generic historical series—e.g. recurrent κόσμοι and the ῥυσμοί that emerge within these—in particular instances atomic motion is fundamentally indefinite: there is no moment when any particular atom is experiencing a precisely definable motion, and nowhere does Democritus indicate that any atomic movement or collision creates or causes particular outcomes that are unqualifiedly inevitable.<sup>43</sup> Thus, even if atomic motion imparts some regularity to phenomena (when we look at these collectively and attempt to categorize them generically), it does not foreordain how particular instances of these phenomena must play out their temporary existence moment to moment. The series of atomic collisions that defines a particular κόσμος is necessarily regular in some sense: barring unforeseen accidents—like a world-sized atom crashing into it from outside<sup>44</sup>—it will pass through natural stages of organic development that terminate inevitably in its dissolution. But unforeseen (and unforeseeable) accidents are always possible in an indefinite environment like the early atomist multiverse: infinity brings uncertainty along with it. (That is what infinity is—the *lack of boundaries*. How can there be absolute certainty of any kind where there are no boundaries? Epicureans do not bother to ask this

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43 This is an important point. Aristotle (*Phys.* 4.8.216a16, with Simpl. *ad loc.* 679.4 = fr. 314 Luria) attacks the early atomists for failing to provide linear, causal explanations for atomic movement. As a phenomenon that occurs constantly throughout the atomic multiverse, which is explicitly unlimited in space and time, atomic motion arises from unknown causes (αἰτίαι that Aristotle chides the early atomists for failing to provide). It is thus unmapped “Brownian” motion rather than the mappable “Newtonian” motion that proceeds from a known cause or causes along a calculable trajectory toward a definite, predictable end. It is non-linear, stochastic, and irregular in particular instances—until we see its cumulative, collective results in historical series and designate their retrospective and generic regularity with words like ἀνάγκη. Democritus does not need to invent the explicit swerve of Epicurus because his concept of atomic motion already carries infinite swerves implicit in it.

44 See DK68A40 (quoted on page 114), where Hippolytus remembers Democritus discussing collision between κόσμοι as one cause for cosmic demise, and fr. 207 Luria, where Democritus appears on record imagining the possibility that atoms as large as κόσμοι exist. Here as elsewhere, Democritus deals in the possible: as he imagines it, his worldview is not a closed system precluding possibilities. Like other Critical διάκοσμοι, his is a speculative description, not a precise definition.

question.) Thus, the regularity of any κόσμος in the early atomist multiverse is not a linear, non-stochastic regularity: every κόσμος will dissolve at some point, of necessity, but the precise manner of its dissolution is indeterminate.

In the same way, the series of atomic collisions that define any human ῥυσμός is generically determined (*I will die*) and particularly indefinite (*how precisely I will die remains fundamentally uncertain: I could perish prematurely as the result of an accident, or I might die in my bed at the end of a long and full life*). The moral will that arises as an emergent property of my human shape is limited. It cannot abolish the necessary reality that I will die. That said, it is not utterly null: it does have a material effect on the state of my human shape as I approach death. If I experience it in a particular way, i.e. learning from instruction (διδασχῇ, διδάσκειν), I can approach my death (as all mortals must) better than I would otherwise. Even if I cannot learn how to make deep water disappear from human experience entirely, I can learn to swim in it and teach the art of swimming to other people (μηχανὴ οὖν εὐρέθῃ, νήχεσθαι διδάσκειν [d<sub>2</sub>]), altering human shape in a material way (ἡ διδασχῇ μεταρυσμοῖ τὸν ἄνθρωπον [d<sub>1</sub>]): the physiological character of each individual swimmer changes its form as he exerts the physical and mental effort required to master the skill of traversing deep water without drowning.

Democritus' words on swimming (d<sub>2</sub>) offer valuable insight into the atomist's understanding of human morality, confirming and illustrating what we have already seen (in this chapter and the preceding one). In the early atomist διάκοσμος, each individual animal shape—including all human ones—exists as a temporary system of atoms flowing

together more or less coherently in a restless ocean of atoms that swirl around outside it (but not isolated from it). In this ocean, external atoms impinge on the individual shape constantly in waves—the atomic films (εἴδωλα) that emanate from surrounding shapes.<sup>45</sup> These waves influence the movements of the individual shape, exerting determinative pressure on its destiny (the manner in which its particular material coherence manifests itself, the quality with which that coherence moves from birth toward death). But the issue of that pressure—the response that individual shapes make to it in particular instances—is never perfectly regular (minutely calculable, absolutely invariable).

If my human shape is submerged in deep water, to take the example offered by Democritus, then the waves emanating from the water's atomic mass exert determinative pressure on my individual destiny: I must swim (and postpone the inevitable dissolution of my temporary physical integrity) or drown (and experience my mortality immediately rather than postpone it). These are the limits within which my morality necessarily exists. But my destiny—the outcome of that morality—is never a foregone conclusion, with some linear chain of causation determining that I must drown because I have not learned to swim (vel sim.). Anyone with experience in the real world knows that animals (including humans) respond stochastically to deep water. Outcomes are not absolutely determined (or determinable) by calculable factors. If you throw inexperienced animals into deep water, some respond by drowning. Others swim spontaneously (not always as well as they will later, assuming they survive and acquire more experience swimming). This spontaneous success is the cornerstone of Democritean ethics. Remember from the

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<sup>45</sup> See the testimonia quoted and discussed on pages 174 and (especially) 227-242 above.



preceding chapter—and (a) in this discussion—that human shape historically finds itself limited by particular environmental circumstances (in deep water, so to speak). It reacts instinctively to these circumstances, expressing the momentary convergence between its internal atomic state and external atomic waves as movement. The issue of this movement varies stochastically in particular instances: sometimes, it is sudden death (e.g. when a drowning animal thrashes about ineffectually and cannot manage to swim). Other times, it is not (e.g. when a drowning animal thrashes about and manages to swim after some fashion). Human shape is materially constituted such that it is inclined to be impressed with particular instances of success (we notice the drowning animal that thrashes and manages to swim). Impressed with some particular instance of success, human shape naturally seeks to reproduce it, cultivating the random benefit offered by the accident until it becomes the predictable profit offered by deliberate habit. This is exactly how Democritus imagines primitive men learning culture from each other and other animals: unpremeditated animal behavior (nesting, spinning silk, singing, killing hostile species, caring for offspring, vocalizing randomly, asses impregnating mares) leaves a material impression on humanity, an impression that is converted over time into a conscious and deliberate habit (housebuilding, weaving and mending, song, retributive justice, filial duty, language, mule-breeding).<sup>46</sup> Impressed by the lucky accident, we cultivate it, attempting to tame its wild randomness by making it recur regularly in ways that we find beneficial to the integrity of our human shape. How does this happen?

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<sup>46</sup> See chapter 3.2.2-3 above. Notice that the Democritean *Kulturgeschichte* becomes impossible if Democritus is a rigid determinist: see note 53 below.

In terms of the atoms that compose our human shape, we express the convergence between our unique understanding of past success (material impressions on our atomic soul) and external circumstances (material emanations impinging on us) as collective atomic movement that takes our material shape toward the recurrence of that success. Having avoided death by drowning once, we seek deep water again and again, cultivating the convergence between our material selves and that particular material environment that finds eventual issue in our learning to swim. This process of cultivation changes our material shape ( $d_i$ ) such that encounters with deep water are less likely to result in sudden death for us (dissolution of the atomic bonds that give our shape integrity). Once we become expert swimmers, we can use our experience as a means for transforming others in a material way,<sup>47</sup> broadcasting our impressions of proper swimming technique the way envious people broadcast malevolent impressions in fr. 579 Luria (see page 228), so that people in our environment have the chance to turn the lucky accident of not drowning into the prudent (cultivated, instructed) habit of being able to swim.<sup>48</sup>

Note that we are always talking about probabilities here, not certainties (nor mathematically computable probabilities<sup>49</sup>). That is the meaning of fr. 646 Luria: human shape is inherently fragile, such that it can always fall apart, no matter what anyone does

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47 Remember that the soul is as much a material (and impressionable) object for Democritus as the body. This does not mean that it is driven by linear causation toward an inevitable doom, *pace* Epicureans (and any others who make Democritus a hard determinist).

48 Thus particular accidents (e.g. a random mating between one particular ass and a particular mare in fr. 561 Luria) become causes for widespread habits (mule-breeding). Democritus makes this part of his ethics explicit as a general rule in fr. 759 Luria: τράπεζαν πολυτελέα μὲν τύχη παρατίθῃσιν, αὐταρκέα δὲ σωφροσύνη (Stob. 3.5.26). See pages 236-252 above.

49 These are another instance of the kind of precise uncertainty represented by the Epicurean swerve. Such precision appears entirely foreign to Democritus as he remains extant.

or does not do (a). Education (διδάχῃ, διδάσκειν) just makes us more aware of ways and means available to improve individual and collective odds for survival in particular acute situations (e.g. when we find ourselves in deep water). It does not abolish the reality that we all die at some point (individually and collectively)—that the material entities we can manipulate to prolong human life (the way a swimmer manipulates deep water) can never be manipulated such that they lose entirely their ability to cause us harm (d<sub>2</sub>). Life is built out of death, so that some suffering—including the final experience of material dissolution—is always inevitable (a). Education trains us to meet this reality, exposing our perceptive abilities to the lucky accident so that we learn to cultivate it where we find it beneficial and avoid it where it appears harmful—without cherishing any naïve hope of cheating our inherent mortality by avoiding all suffering entirely.

From this point of view, the purpose of education is to provide students with perceptual experiences that they can use to avoid unnecessary suffering as they swim from birth to death in the sea of atoms that constitutes their particular environment (a). It is not about recognizing and/or making peace with human inability to make meaningful decisions (as those who want to make Democritus a rigid determinist would expect), and the reason for this is not that Democritus forgot that his world-order was non-random when he came to consider human moral behavior.<sup>50</sup> On the contrary, we can now see

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50 No matter how often Epicureans insist that words like ἀνάγκη necessarily imply linear causality, they will be wrong. When we examine the evidence without accepting their interpretation, we do not see Democritus arguing for hard determinism. It may be useful to remember here that Democritus explicitly disavows the idea (affirmed by Epicurus) that words necessarily carry inherent meanings, such that a particular word always implies a particular referent (fr. 563 Luria, quoted and discussed above on pages 255-268). For Democritus, words (including ἀνάγκη) are just arbitrary collections of sound associated randomly with historical accidents. They are descriptors (that point inductively towards something foreign to them), not definitions (that carry clear truth deduceable directly from

clearly that Democritus never imagined a κόσμος in which it would make sense to oppose moral freedom to physical determinism: in Democritus' mind, the stochastic experiences we call moral freedom arise naturally from physical matter, which determines them necessarily and generically but not minutely or particularly. Human moral freedom, from Democritus' point of view, demands determinism (which allows human shape to exist coherently and formulate more or less coherent responses to its environment). But the determinism it demands is not an Epicurean straitjacket. Utter lack of determinism would mean the dissolution of all order (of any kind), just as an impossibly rigid determinism would spell the demise of every familiar natural order. The world as we experience it—and as Democritus imagines it throughout his extant corpus—is neither perfectly regular nor perfectly irregular. It is both regular and not, simultaneously orderly and stochastic. Democritus appears quite aware of this empirical reality in the testimonia, whether he speaks as a physicist (e.g. fr. 29, 103, 316 Luria),<sup>51</sup> as an epistemologist (e.g. fr. 48, 51 Luria),<sup>52</sup> as a cultural historian (e.g. fr. 561 Luria),<sup>53</sup> or as a moralist:

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themselves in the absence of inductive experience). To read Democritus as a clear guide to linear, deductive truth (in any field of inquiry) is to misunderstand him profoundly.

- 51 See pages 122 (note 212), 125, and 127 above. Dionysius is substantially correct when he notes that Democritus makes τύχη mistress of the multiverse (fr. 29 Luria): the activities that the atomist invokes to describe the physical behavior of atoms—e.g. the spontaneous sorting of pebbles on the beach or of grain in a sieve (fr. 316 Luria)—are manifestly stochastic without being utterly irregular.
- 52 See page 198 (note 49) above. Human beings are separated from clear truth (fr. 48 Luria), which eludes them in the abyss (fr. 51 Luria). No regularity that the human shape perceives is an absolutely clear picture of the entire atomic multiverse existing around it infinitely in every direction. Infinity cannot be reduced to limits that human shapes can perceive. For Democritus, men are necessarily like the proverbial company of blind philosophers who attempt to understand and describe the elephant by feeling different parts of it and reporting their impressions: every human picture of reality necessarily omits data that it cannot receive, impressions that do not reach it, and there is no such thing as a human picture of reality that transcends these limitations completely.
- 53 See page 229 (text) and chapter 3.2.3 (interpretation) above. The mule is an arbitrary historical accident—ἵππον βιασμένον κατὰ τύχην κυῆσαι—before it becomes a regular feature of humanity's cultural environment. As Democritus tells the story, there was no inevitable chain of events leading necessarily to the particular inventor(s) of the mule being in one particular place at one particular time.

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
(d <sub>3</sub> ) ἡ παιδεία εὐτυχοῦσι μέν ἐστι κόσμος, ἀτυχοῦσι δὲ καταφύγιον.	Education is an adornment in good fortune and a refuge in misfortune. ( <i>Taylor</i> )  Democritus, fr. B180 DK = fr. D45 Taylor, = fr. 693 Luria, fr. 21 Gerlach  Stob. 4.34.65
(d <sub>4</sub> ) κρέσσονές εἰσιν αἱ τῶν πεπαιδευμένων ἐλπίδες ἢ ὁ τῶν ἀμαθῶν πλοῦτος.	The expectations of the educated are better [mightier] than the wealth of the ignorant. ( <i>Taylor; supplemented</i> )  Democritus, fr. B185 DK = fr. D50 Taylor, = fr. 697 Luria, fr. 31 Gerlach  Stob. 2.31.94
(d <sub>5</sub> ) καὶ κυβερνήτης ἀγαθὸς ἐνίστε ναυ- αγεῖ, καὶ ἀνὴρ σπουδαῖος ἀτυχεῖ. <sup>54</sup>	Even a good pilot wrecks his ship on occasion, and a competent man experiences misfortune. ( <i>my translation</i> )  Democritus, fr. 33d Luria = fr. 28 Gerlach  Ant. Melissa 1.70 (= PG 136: 981d); CPP 187 Elt.

Like the other moral fragments already presented (a, d<sub>2</sub>), these presume a world in which success is relative (momentary, contextual, accidental) and reversible: just as the expert

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Asses in proximity to mares generally (necessarily) have the chance to impregnate them: any instance of this where people are present becomes an opportunity for the mule to be (re)invented. The regularity of mule-breeding arises out of an irregularity in human experience with asses and mares.

54 Gerlach marks the attribution of this fragment to Democritus as dubious (but not necessarily spurious) because of its *aliena sententiae forma*. I put it forward here as genuine because it agrees precisely with the sentiments in (d<sub>3</sub>) and (d<sub>4</sub>)—fragments whose authenticity Gerlach, Diels-Kranz, Taylor, and Luria all accept—and the rest of the Democritean ethical corpus. If (d<sub>5</sub>) is not actually from Democritus, it nevertheless captures his understanding of παιδεία accurately: education produces not definite results in the particular instance, but better odds in general of acquiring more good than harm from the material environment as one moves inevitably toward dissolution.

swimmer can still drown in deep water (d<sub>2</sub>), the expert pilot can still crash his ship (d<sub>5</sub>).

The educated man has better expectations (d<sub>4</sub>) than the blind gambler when he confronts the collision between his shape and the material circumstances of his environment, but that is not because he must win (and the gambler is not utterly without any hope).<sup>55</sup>

Education exists not to eradicate failure (which is ultimately impossible, given that death is built into the life of composite beings), but to provide a method for coping with it—a refuge (καταφύγιον) where the educated can bear inevitable loss with minimal harm (d<sub>3</sub>).

The upshot of this discussion is to solidify the conclusion of the previous chapter, that Democritus imagines ethics arising naturally from physics. As the physical order of bodies in the early atomist κόσμος is regular generally without being invariable in the particular, so the moral order of human ῥυσμοί as conceived by Democritus is regular generally without being invariable in the particular. The material necessity (ἀνάγκη) that makes physical order possible inevitably makes moral order possible—and limits every instance of its expression (by making human ῥυσμοί mortal and exposing them to more or less stochastic variation in the circumstances that surround them). Just as Democritus imagines the collective ῥυσμός of humanity arising from historical interaction(s) between individuals and their cosmic environment, so he imagines the ῥυσμός of the individual human being arising from his (or her) individual historical interaction(s) with the cosmic environment where he (or she) exists. As the collective shape of human society evolves in response to environmental stimuli being received and transmitted (from person to

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<sup>55</sup> Recall that the table of τύχη is a rich (polytelic) one in fr. 759 Luria (note 48 above): the really lucky gambler might eat there happily over the course of a long and successful life without realizing the precariousness of his position.

person, animals to people, and material experiences to people), so the particular shape of the human individual evolves through education (which exists as a collection of perceptual experiences that exert material influence on the ability of an individual human shape to respond effectively to stimuli in its immediate environment, i.e. to maintain its individual integrity in the teeth of environmental threats that are not necessarily lethal).

This discussion shows that Democritus believed in the capacity of the individual human being to improve his habits (the recurring expression of his particular ῥυσμός). Good habits are teachable. If this were as far as Democritus went, then it might be fair to conclude with Bailey (1928) that the atomist did not develop a clear theory of ethics —“Democritus' 'ethic' hardly amounts to a moral theory” (522)—that his description of the way in which humans are moral contains no clear or consistent instructions for cultivating the right kind of morality. (Saying what human morality is is not the same thing as saying what it ought to be. Affirming that teaching is possible in particular instances is not the same thing as offering specific teachings whose utility you endorse.) Unfortunately for those who want to join Bailey in dismissing the early atomist as a moral theorist, the corpus of ethical fragments reveals that Democritus had a definite strategy for improving human morality—a strategy that is coherent and consistent with the early atomist worldview we have been exploring. It is time to examine that strategy.

### **The Dangerous Power of Pleasure (4.2.2)**

Implicit in Democritean *Kulturgeschichte* and the Democritean perspective on education explored above there lies a normative judgement of human moral behavior that

we have already discussed superficially: *good moral behavior occurs as human shapes respond to their environment in ways that preserve their integrity from unnecessary dissolution (e.g. starving for lack of food or drowning in deep water)*. As noted earlier (e.g. chapter 3.2.3), this judgement makes ethics a matter of cultivating pleasure (the pleasure of survival as an atomic compound) and avoiding pain (the pain of dissolution):

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
(a <sub>1</sub> ) ὄρος συμφορέων καὶ ἀσυμφορέων τέρψις καὶ ἀτερπία. ( <i>Taylor</i> )	Joy and sorrow are the distinguishing mark of things beneficial and harmful. ( <i>Taylor</i> )  Democritus, fr. B188 DK = fr. D26 Taylor = fr. 734 Luria  Stob. 3.1.46
(a <sub>2</sub> ) κατ' αὐτὸν (Δημόκριτον) ... εἶναι κριτήρια ... αἰρέσεως δὲ καὶ φυγῆς τὰ πάθη· τὸ μὲν γὰρ ᾧ προσοικειούμεθα, τοῦτο αἰρετόν ἐστιν, τὸ δὲ ᾧ προσαλλοτριοῦ- μεθα, τοῦτο φευκτόν ἐστιν. ( <i>Luria</i> )	According to him (i.e. Democritus), our experiences are means for judging whether to choose something or avoid it. The thing that we associate with regularly must be chosen, while the thing from which we withdraw ourselves must be avoided. ( <i>my translation</i> )  Democritus, fr. A111 DK = fr. 734 Luria  Sext. <i>Adv. math.</i> 7.140

Stumbling through the material environment that surrounds humanity and responding to the lucky accidents that they encounter in it, survivors naturally perceive things congenial to the needs of their particular shape(s). The pleasure of sating their thirst at a particular body of water leaves a material impression that teaches them to seek that water again (a<sub>1</sub>). The pain of being attacked by a particular wild animal teaches them to avoid such shapes



in future (a<sub>1</sub>). Thus, survivors of the lucky accident naturally and necessarily respond to the future with impressions from their past, shunning what has hurt them and embracing what has helped (a<sub>2</sub>). Particular instances of pleasure lead to general ideas about what is good and thence to the habits (νόμοι) that cultivate this good, while particular instances of pain lead to general ideas about what is evil and thence to the habits that avoid it (a<sub>2</sub>).<sup>56</sup>

Unfortunately, our general ideas of what is pleasant and what is not inevitably fail us at some point, leading us to make potentially fatal moral errors. Not every particular instance of any pleasure is necessary for survival, or even conducive to it:

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
(a <sub>3</sub> ) εἴ τις ὑπερβάλλοι τὸ μέτριον, τὰ ἐπιτερπέστατα ἀτερπέστατα ἂν γίγνοιτο. <sup>57</sup> (Luria)	If someone were to exceed the appropriate measure, the most delightful things would become most unpleasant. (Taylor)  Democritus, fr. B233 DK = fr. D97 Taylor = fr. 753 Luria  Stob. 3.17.38

56 Pleasure exists as a dynamic material experience here and throughout: kinetic interaction(s) between the external and internal environment of the individual human shape create(s) particular perceptual experiences referred to generically as *pleasure* (Democritean ἡδονή, τέρψις).

57 The message of this particular fragment recurs in one of the terse ethical aphorisms normally assigned to Democritus even though their author is sometimes identified (in the sources) as Democrates: ἡδοναὶ ἄκαιροι τίκτουσιν ἀηδίας (Democrat. 36 = DK68B71, fr. 755 Luria). Several gnomes attributed to Democrates quote Democritus *verbatim* or epitomize aphorisms credited to the atomist elsewhere. For good examples of this, see DK68B84, B181, B244, B264, and fr. 599, 678, 752, 783, 784 Luria. Stewart (1958, 180) and Procopé (1989, 308) provide some helpful discussion. Philippson (1924) uses this peculiar coincidence to argue that Democrates is an invention of ancient scribes epitomizing Democritus and misspelling his name. His thesis is not as far-fetched as it might at first appear: ancient sources represented in the florilegia spell erratically, such that the creation of an otherwise unknown Democrates from Democritus is not impossible. Witness the text of Stob. 3.18.50 as it appears in MS L: the scribe writes Δημοκρᾶ before changing it to Δημόκρᾱτος, which the editor—Wachsmuth (1958) 3:464—corrects to Δημοκράτης. Given such uncertainty in our texts, it is easy to see how Democritus might have been confused with (an admittedly less famous) Democrates, whether the latter really existed as an historical author of ethical aphorisms or not. In this study, I avoid the problems posed by Democrates' historicity and the proper attribution of his aphorisms by refraining from making them the

<p>(b<sub>1</sub>) τὸ χρῆζον οἶδεν, ὁκόσον χρήζει, ὁ δὲ χρῆζων οὐ γινώσκει. (DK)</p>	<p>The thing that is in need<sup>58</sup> knows how much it needs, but the man who is in need does not know. (<i>Taylor</i>)</p> <p>Democritus, fr. B198 DK = fr. D62 Taylor = fr. 561a Luria</p> <p>Stob. 3.4.72</p>
<p>(b<sub>2</sub>) φειδῶ τοι καὶ λιμὸς χρηστή· ἐν καιρῶι δὲ καὶ δαπανή· γινώσκειν δὲ ἀγαθοῦ.<sup>59</sup> (<i>Taylor</i>)</p>	<p>Thrift and hunger are useful, and expense too at the right time. It is the mark of a good man to discern. (<i>Taylor</i>)</p> <p>Democritus, fr. B229 DK = fr. D93 Taylor = fr. 760 Luria</p> <p>Stob. 3.16.19</p>
<p>(a<sub>4</sub>) ὅσοι ἀπὸ γαστρὸς τὰς ἡδονὰς ποιέονται ὑπερβεβληκότες τὸν καιρὸν ἐπὶ βρώσεσιν ἢ πόσεσιν ἢ ἀφροδισίοισιν, τοῖσι πᾶσιν αἱ μὲν ἡδοναὶ βραχεῖαί τε καὶ δι' ὀλίγου γίνονται, ὁκόσον ἂν χρόνον ἐσθίωσιν ἢ πίνωσιν, αἱ δὲ λῦπαι πολλαί. τοῦτο μὲν γὰρ τὸ ἐπιθυμεῖν ἀεὶ τῶν αὐτῶν πάρεστι καὶ ὁκόταν γένηται ὁκοίων ἐπιθυμέουσι, διὰ ταχέος τε ἡ ἡδονὴ παροίχεται, καὶ οὐδὲν ἐν αὐτοῖσι χρηστὸν ἔστιν ἄλλ' ἢ τέρψις βραχεῖα, καὶ αὖθις τῶν αὐτῶν δεῖ. (<i>Luria</i>)</p>	<p>Those who take their pleasures from their belly, exceeding what is appropriate in food or drink or sex, to all of them their pleasures are meagre and brief, lasting just so long as they are eating and drinking, and their pains are many. For this desire for the same thing is always with them, even when they get what they desire, and the pleasure soon passes, and they have no profit except brief delight, and then they need the same things again. (<i>Taylor</i>)</p> <p>Democritus, fr. B235 DK</p>

sole basis for any of my arguments. All the ethical aphorisms I use to argue in the text of this study are attributed explicitly to Democritus, and I consciously note and justify any fragments whose attribution has been challenged (e.g. fr. 33d Luria on page 322 above).

58 Luria interprets τὸ χρῆζον as referring implicitly to an animal (ζῷον), but there is no reason to do so. In fact, the images of animate and inanimate objects sorting themselves spontaneously in fr. 316 Luria mitigates against such a narrow reading of this aphorism, which appears to focus on ignorance as a unique human property (something arising from our particular material constitution that separates us from other compound objects extant in nature, whether animate or inanimate).

59 Compare Wachsmuth (1958) 3:485.

	<p>= fr. D99 Taylor = fr. 750 Luria</p> <p>Stob. 3.18.35</p>
<p>(a<sub>5</sub>) ἔοικε παλαιά τις αὕτη τῷ σώματι διαδικασία πρὸς τὴν ψυχὴν περὶ τῶν παθῶν εἶναι. καὶ Δημόκριτος μὲν ἐπὶ τὴν ψυχὴν ἀναφέρων &lt;τὸ&gt; κακοδαιμόν<sup>60</sup> φησὶν· εἰ τοῦ σώματος αὐτῇ δίκην λαχόντος, παρὰ πάντα τὸν βίον ὧν ὠδύνηται &lt;καὶ&gt; κακῶς πέπονθεν, αὐτὸς γένοιτο τοῦ ἐγκλήματος δι&lt;καστής&gt;,<sup>61</sup> ἢδέως ἂν καταψηφίσασθαι τῆς ψυχῆς, ἐφ' οἷς τὰ μὲν ἀπώλεσε τοῦ σώματος ταῖς ἀμελείαις καὶ ἐξέλυσε ταῖς μέθαις, τὰ δὲ κατέφθειρε καὶ διέσπασε ταῖς φιληδονίαις, ὥσπερ ὀργάνου τινὸς ἢ σκεύους κακῶς ἔχοντος τὸν χρώμενον ἀφειδῶς αἰτιασάμενος. (DK, Luria)</p>	<p>The body appears to have an ancient dispute with the soul about the passions. Democritus, attributing wretchedness to the soul, says, 'If the body brought a suit against it [i.e. the soul] for all the sufferings and ills it had endured throughout its whole life, and one had oneself to judge the case, one would gladly condemn the soul for having ruined certain features of the body through carelessness and made it soft through drink and brought it to rack and ruin through love of pleasure, just as if a tool or utensil were in a bad state one would blame the person who used it carelessly.' (<i>Taylor, augmented</i>)</p> <p>Democritus, fr. B159 DK = fr. D34 Taylor = fr. 776 Luria</p> <p>Plut. <i>Fr. De libid. et aegr.</i> 2.1</p>

60 DK restores κακοδαίμων in the MSS to read <τὴν αἰτίαν τῆς> κακοδαιμον<ίας>, a restoration whose meaning Luria approves (*Diels, audacter fortasse, sed sensum loci bene divinans*) even though his restoration is more conservative. I have decided to follow Luria because I prefer more conservative restorations in the absence of a clear reason to do otherwise.

61 Luria restores δι ... in the MSS to read δι<αιτητής> instead of δι<καστής> (quoted above), the earlier restoration by Tyrwhitt that DK and Taylor accept. Both restorations are equally appropriate to the atomist's cultural milieu (see e.g. Herodot. 1.91; 3.14, 31; 5.95; Plat. *Leg.* 956c), and they carry more or less the same meaning (in general and in this particular context). I have decided to follow the text of DK in this instance because it is more familiar.

(b <sub>3</sub> ) ἀνοήμονες τῶν ἀπεόντων ὀρέγονται, τὰ δὲ παρόντα καὶ παρωιχημένων κερδαλεώτερα ἔοντα ἀμαλδύνουσιν. ( <i>Luria</i> )	People without understanding long for the things that are not present and squander the things that are present, even when these latter are more useful than what is gone. <i>(my translation)</i>  Democritus, fr. B202 DK = fr. D66 Taylor = fr. 794 Luria  Stob. 3.4.76
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Even if a pleasure is generally necessary for survival (*humans must cultivate the pleasure of eating*), that does not mean that every particular instance of that pleasure is necessary for survival (*there are limits to the pleasure of eating: the individual human shape can only eat so much food within a certain time-frame before the pleasure of eating starts to become painful—and ultimately destructive*). Thus, though pleasure is our guide to survival (a<sub>1</sub>), experience reveals that it is not infallible. We cannot use it to separate real needs perfectly from spurious—an impossible task for humanity (b<sub>1</sub>). If we generalize too naively from particular instances of it—e.g. concluding from one meal that more food will always be more pleasant and cultivating unmitigated gluttony as a habit (a<sub>2</sub>)—then it deserts us eventually (a<sub>3</sub>) and even turns into pain (a<sub>4</sub>) that can be lethal (a<sub>5</sub>). Unlike the uncomprehending fools whose desire for the recurrence of particular instances of past pleasure knows no limit (a<sub>4</sub>, b<sub>3</sub>),<sup>62</sup> Democritus' ἀγαθός (b<sub>2</sub>) recognizes that no particular pleasure exists such that more is always better (a<sub>3</sub>, b<sub>2</sub>): he finds unexpected pleasure in famine (λιμός) to balance his pleasure in feasting—δαπανή (b<sub>2</sub>)—lest naive φιληδονία

62 τοῦτο μὲν γὰρ τὸ ἐπιθυμεῖν ἀεὶ τῶν αὐτῶν πάρεστι καὶ ὁκόταν γένηται ὁκοίων ἐπιθυμέουσι, διὰ ταχέος τε ἡ ἡδονὴ παροίχεται (a<sub>4</sub>). ἀνοήμονες τῶν ἀπεόντων ὀρέγονται, τὰ δὲ παρόντα καὶ παρωιχημένων κερδαλεώτερα ἔοντα ἀμαλδύνουσιν (b<sub>3</sub>).

destroy the integrity of his human shape ( $a_5$ ). Ignorant ( $b_1$ ) of the precise moment when some pleasure that he experiences will turn into potentially lethal pain ( $a_3$ ,  $a_4$ ,  $a_5$ ), he cultivates moral habits defined by measure ( $a_3$ ) and thrift ( $b_2$ )—i.e. as little necessary pleasure as possible<sup>63</sup>—and he keeps his attachment to past instances of pleasure as weak as possible ( $a_4$ ,  $b_3$ ), recognizing that the recurrence of familiar pleasures will always at some point prove noxious to him ( $a_4$ ).<sup>64</sup>

As Democritus imagines the human condition, the driving force behind moral failure (the untimely disintegration of human shape) is the soul— $\psi\upsilon\chi\acute{\eta}$  ( $a_5$ ). From our discussion in chapter 2.3 above, we remember this soul exists as a collection of small, mercurial atoms that inhabit the atomic shell<sup>65</sup> constituted by the body and exert some determinative influence on that shell's responses to its material environment. That environment influences the soul by bombarding it—through the body's sensory cortices—with external particles, atomic clouds ( $\epsilon\acute{\iota}\delta\omega\lambda\alpha$ ) that emanate from other compound objects and strike the soul in a particular part of a particular κόσμος. The collision between external material shapes ( $\epsilon\acute{\iota}\delta\omega\lambda\alpha$ ) and the internal soul finds issue in movement: the soul changes its native movement<sup>66</sup> in response to external stimulus, which ultimately

63 This attitude appears clearly limned in fr. 732 Luria ( $\mu\acute{\alpha}\lambda\lambda\alpha$  γὰρ καὶ στιβὰς λιμοῦ καὶ κόπου γλυκύτατα ἰάματα) and 757 Luria ( $\tau\acute{\omega}\nu$  ἡδέων τὰ σπανιώτατα γινόμενα μάλιστα τέρπει).

64 Most advice in the Democritean ethical corpus appears directed at the individual, but the community is important to the atomist as well. For a discussion of the proper relationship between individual and collective humanity, see section 4.2.5 below.

65 In fr. 710, 750, 783, and 784 Luria, Democritus refers to the body as a σκῆνος. This is the Teian word for *tent*, and its occurrence in the fragments is a small confirmation of their authenticity as products of Democritus' cultural milieu—since Abdera was a colony of Teos, and the two share many elements of culture (including language). See Procopé (1989), LSJ s.v. σκῆνος, and chapter 1.2 above.

66 Remember that no atoms in the early atomist multiverse are predictably immobile (note 43 above). The atoms of the individual soul *in vivo* are thus always experiencing some kind of motion.

changes the body's movement (since this is a function of soul movement). Perceiving the shape of a tiger in the grass typically makes my soul move such that my body expresses itself in movements conventionally designated by words like *fear* or *caution*.

In certain situations (e.g. my encounter with the tiger), material necessity dictates the nature of my response—the issue of the encounter between the tiger's εἶδωλα, my material ψυχή, and my body (σκήνος)—narrowly. I must respond to the tiger's shape appropriately within a narrow time-frame or run a high risk of disintegrating suddenly (when the tiger responds to my εἶδωλα by eating me). Here the nature of an appropriate kinetic response is necessarily limited by particular factors that vary between individual organisms and environments—e.g. my inherent aptitude for fighting or fleeing, my proximity to the tiger, and the presence or absence of other phenomena in the area (e.g. tools, weapons, allies, enemies). If I am unfit for fighting and my environment offers inadequate opportunity for flight or external succor (from allies who might assist me), then the issue of my shape meeting the tiger's is probably death or (at least) some severe dismemberment (which will deform my human shape and cripple it for the rest of its temporal existence, an existence which may be foreshortened).

Here, in an acute encounter with the possibility of sudden death, the pleasure of survival becomes intense—and survivors who meet with a lucky accident cultivate its recurrence without obvious ill effects, learning from their impressions to mould human shape for fighting, fleeing, and venturing in company into the territory of dangerous wild animals. Once human shape has been thus moulded—such that it consciously possesses

the resources historically valuable in defeating an acute κίνδυνος like the tiger—then it can only pray, with Democritus,<sup>67</sup> that particular instances of that κίνδυνος in its unique individual experience happen when it is ready. I pray that tigers chance upon me only when my internal and external circumstances mean that I am able to escape death the way other human shapes have done before me. I pray that they do not find me when the relationship between my ψυχή and σκῆνος is seriously disturbed (e.g. by sleep or some drug<sup>68</sup>), that they do not catch me in an environment where the resources I have cultivated (weapons, allies, skills for fighting and/or fleeing) are useless.

As extant, Democritus' *Morallehre* recognizes the importance of learning (taking material impressions) from instances of acute danger,<sup>69</sup> but his main focus lies elsewhere. In what remains of his work, he does not address those people who never see the tiger. His instructions for swimming<sup>70</sup> are not aimed at those whose first encounter with deep water proves fatal. Being foolish, from his perspective, is not the same thing as being unlucky (i.e. meeting the tiger or the deep water when one is unprepared to survive the encounter because of unpredictable circumstances that influence one's human shape at a particular moment).<sup>71</sup> Democritus' fools are not those whom the tiger (or the deep water) surprises, but those whose successful encounters with particular tigers (or a particular

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67 Remember Democritus' prayer to meet with propitious images in fr. 472a Luria: Δημόκριτος μὲν γὰρ εὐχεσθαι φησι δεῖν, ὅπως εὐλόγων εἰδώλων τυγχάνωμεν, καὶ τὰ σύμφυλα καὶ τὰ χρηστὰ μᾶλλον ἡμῖν ἐκ τοῦ περιέχοντος ἢ τὰ φαῦλα καὶ τὰ σκαιὰ συμφέρεται (Plut. *Aem.* 1.4).

68 Remember that prudent thought can only occur when the soul's mixture is properly balanced—συμμέτρως ἐχούσης τῆς ψυχῆς κατὰ τὴν κρῆσιν (fr. 460 Luria, quoted in full on page 311). Anything that disturbs that (physical) balance in the (material) soul threatens the integrity of human shape.

69 Human life is inherently and invariably characterized by necessities and disasters that we must be concerned to recognize and meet: see fr. 646 Luria (page 310) and 717 Luria (page 250).

70 See fr. 33 Luria, quoted on page 313 above.

71 See fr. 593 Luria, quoted below on page 337 and discussed thereafter.

bodies of deep water) impress them with a false and dangerous sense of complacency.<sup>72</sup>

Democritus aims to reform those who think cultivating moral success means embracing every pleasure uncritically, without limit—the same way we would embrace the pleasure of surviving an acute encounter with a tiger or some deep water.

Encountering acute danger—a tiger or a treacherous body of water—we do not naturally wish to suffer any material damage. In such situations, our natural desire is to keep the pleasure of survival utterly unmixed and unlimited—we do not desire to come out only partially mauled or half-drowned (even if that is the issue of our efforts). But not all pleasure is like the pleasure of surviving a tiger attack (or death by drowning). The pleasure of eating, to give one example offered by Democritus (a<sub>4</sub>), should not be unmixed: unless it is limited by the pain of starving, it becomes fatal. When we come to dine, then, we must desire pain—limiting our eating pleasure and cherishing that limit as assiduously as the most intense pleasure, if we want to avoid ruining the integrity of our human shape (a<sub>5</sub>). This is where the ethics of Democritus become useful, explaining to fortunate survivors of acute danger how to disarm the human soul of its natural tendency to desire all pleasures unmixed and unlimited—a natural tendency which inclines human shape away from acute dangers (like the tiger) and towards more subtle, but no less fatal, dangers (like the danger of eating too much and/or starving too little).

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72 Thriving at the table of chance (fr. 759 Luria, quoted above in note 48), the foolish do not realize that their success is precarious, and so they never bother to acquire σωφροσύνη through education. In the metaphor made famous most recently by Taleb (2010), they are turkeys that take great pleasure living as captive dependents until the butcher slaughters them for Thanksgiving.



### **Democritus' Recipe for Human Happiness (4.2.3)**

Disarming subtle tendencies toward destruction that lurk in the human soul requires some understanding of what these tendencies are—i.e. their pathology—and what resources human experience offers us for coping with them. At what point does the soul's experience of pleasure cease to be useful as an indicator of which moral behaviors to cultivate? How do we cultivate the lucky accident that lets us eat—and experience the pleasure of eating—without falling prey to the unlucky accident of destroying our health through eating too much? How do we separate the necessary pleasure of eating from the unnecessary pleasure of eating too much, the necessary habit (i) of nourishment from the unnecessary habit (ii) of gluttony? The Democritean ethical corpus provides a wealth of information showing that the atomist gave questions like these serious thought. In fact, he even offers an answer, a recipe for cultivating moral habits (i) that build the integrity of human shape more than they tear it down. In order to understand this recipe, we must remind ourselves of the way that Democritus understands human nature. We must see his portrait of the human condition, his understanding of the human soul (as it exists in mankind generically and in each human being particularly).

We have seen that Democritus conceives human shape (ῥυσμός) as a plastic material compound that disintegrates inevitably (like every other material compound in the multiverse), experiencing vicissitudes whose only possible outcome is death:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Luria, Krivushina</i> )
(a) γινώσκειν χρεὼν ἀνθρωπίνην βιοτὴν ἀφαιρῆν τε ἐοῦσαν καὶ ὀλιγοχρόνιον πολλῆσίιν τε κηρσὶ συμπεφυρμένην καὶ ἀμηχανίησιν ...	Bisogna prendere consapevolezza della fragilità e della brevità della vita umana, che si rivela anche intessuta di molteplici sciagure e bisogni ...  Democritus, fr. B285 DK = fr. D150 Taylor = fr. 646 Luria  Stob. 4.34.65

This means that Democritus recognizes absolutely no outcome in human experience that is purely positive (in the sense that it strengthens the integrity of human shape without also threatening to destroy it):

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>Taylor</i> )
(b) ἀφ' ὧν ἡμῖν τὰγαθὰ γίγνεται, ἀπὸ τῶν αὐτῶν τούτων καὶ τὰ κακὰ ἐπαυρισκοίμεθ' ἅν, τῶν τε κακῶν ἐκτὸς εἶημεν. αὐτίκα ὕδωρ βαθὺ εἰς πολλὰ χρήσιμον καὶ δαῦτε κακόν· κίνδυνος γὰρ ἀποπνιγῆναι. μηχανὴ οὖν εὑρέθη, νήχεσθαι διδάσκειν. ( <i>Luria</i> )	From the very same things as benefit us we may also get evils, and escape from evils. For example, deep water is useful for many things, and then again bad; for there is danger of drowning. So a remedy has been discovered, teaching people to swim.  Democritus, fr. B172 DK = fr. D37 Taylor = fr. 33 Luria  Stob. 2.9.1

Every evolution in human shape necessarily leaves it exposed to the κῆρες and ἀμηχανία already mentioned (a). Inevitably, the material circumstances that create human life also destroy it: escaping one death moves us marginally closer toward embracing another one, until eventually our ability to resist under pressure is exhausted and we dissolve. In medical terms, the drugs that cure human illness are also poisons capable of causing it.

In historical terms, those of us fortunate enough to escape the Charybdis of acute external disaster (e.g. the tiger or deep water discussed above) rush headlong into the Scylla of our own internal weakness, a fragility that exists inherent in our shape, particularly that inner part of our shape that directs our movement—i.e. the soul (ψυχή) that wrecks the body with its φιληδονίαί in fr. 776 Luria (quoted on page 328 above). Numerous fragments illustrate how Democritus imagines the soul of the lucky survivor (the man who survives external threats against his life) weakening the integrity of his shape, inclining the course of his life naturally toward premature ruin:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
(c) λέγωμεν οὖν ἐν ἡμῖν, ὅτι πολλὰ μὲν, ὧ ἄνθρωπε, σοῦ καὶ τὸ σῶμα νοσήματα καὶ πάθη φύσει τε ἀνίησιν ἐξ ἑαυτοῦ καὶ προσπίπτοντα δέχεται θύραθεν· ἂν δὲ σαυτὸν ἀνοίξης ἔνδοθεν, ποικίλον τι καὶ πολυπαθὲς κακῶν ταμιεῖον εὐρήσεις καὶ θησαύρισμα, ὥς φησι Δημόκριτος, οὐκ ἔξωθεν ἐπιρρεόντων, ἀλλ' ὥσπερ ἐγγείους καὶ αὐτόχθονας πηγὰς ἔχόντων, ἃς ἀνίησιν ἢ κακία πολύχυτος καὶ δαψιλῆς οὔσα τοῖς πάθεσιν.	Let us say among ourselves, friend, that your body produces many diseases and affections from its own nature, and that it receives many others from outside. If you open yourself up on the inside, you will find something elaborate and susceptible of many passions, a storehouse and treasury of evils, as Democritus says—not the kind that flow down upon you from the outside, but such as have native and autochthonous springs produced by the evil that exists diffuse and profuse in our emotional experiences. ( <i>my translation</i> )  Democritus, fr. B149 DK = fr. D33 Taylor = fr. 776a Luria  Plut. <i>Animine an corp. aff.</i> 2.500d

<p>(d) ὑγίειν εὐχῆσι παρὰ θεῶν αἰτέονται ἄνθρωποι, τὴν δὲ ταύτης δύναμιν ἐν ἑαυτοῖς ἔχοντες οὐκ ἴσασιν· ἀκρασίῃ δὲ τάναντία πρήσσοντες αὐτοὶ προδόται τῆς ὑγείης τῆσιν ἐπιθυμίῃσιν γίνονται.</p>	<p>People ask the gods for health in their prayers, but do not realize that the control of their health lies with them [<i>lit.</i> inside them]; through lack of self-control they act in opposition to it and so themselves betray their health to their desires. (<i>Taylor, supplemented</i>)</p> <p>Democritus, fr. B234 DK = fr. D98 Taylor = fr. 593 Luria</p> <p>Stob. 3.18.30; Maxim. <i>L. c.</i> 27.612 (<i>PG</i> 91:875a); Ant. Melissa 1.39.79 (<i>PG</i> 136:913d); <i>CPP</i> 691</p>
<p>(e) ἀνοήμονες ῥυσμοῦνται τοῖς τῆς τύχης κέρδεσιν, οἱ δὲ τῶν τοιῶνδε δαήμονες τοῖς τῆς σοφίης.</p>	<p>The uncomprehending are shaped by the profits of chance, but those with experience of such things are shaped by the profits of wisdom. (<i>my translation</i>)</p> <p>Democritus, fr. B197 DK = fr. D61 Taylor = fr. 798 Luria</p> <p>Stob. 3.4.71</p>
<p>(f) ὧν τὸ σκῆνος χρήζει, πᾶσι πάρεστιν εὐμαρέως ἄτερ μόχθου καὶ ταλαιπωρίας· ὁκόσα δὲ μόχθου καὶ ταλαιπωρίας χρήζει καὶ βίον ἀλγύνει, τούτων οὐκ ἱμεῖρεται τὸ σκῆνος, ἀλλ' ἢ τῆς γνώμης κακοθηγίη.<sup>73</sup></p>	<p>What the body requires is easily available to all without toil and moil; the body does not desire things that require toil and moil and make life painful, but the ill-honed state of mind does. (<i>my translation</i>)</p> <p>Democritus, fr. B223 DK = fr. D87 Taylor = fr. 750 Luria</p> <p>Stob. 3.10.65</p>

73 Luria seems right to prefer the MSS reading κακοθηγίη over emendations (Diels' κακοθιγίη or Wilamowitz' κακοηθίη), and I tentatively endorse his derivation of this abstract noun from the Homeric verb θήγω, meaning *to sharpen* (LSJ s.v.). This usage would agree well with the understanding of mind that Democritus expresses elsewhere, e.g. fr. 49 Luria: δηλοῖ μὲν δὴ καὶ οὗτος ὁ λόγος, ὅτι ἐτεῖμι οὐδὲν ἴδμεν περὶ οὐδενός, ἀλλ' ἐπιρυσμὶ ἐκάστοισιν ἢ δόξας (Sext. *Adv. Math.* 7.137). In human

<p>(g) ἡ τοῦ πλεονος ἐπιθυμία τὸ παρεὸν ἀπόλλυσι τῇ Αἰσωπείῃ κυνὶ ἰκέλῃ γινομένη.</p>	<p>The desire for more destroys what one has, like the dog in Aesop's fable. (<i>Taylor</i>)</p> <p>Democritus, fr. B224 DK = fr. D88 Taylor = fr. 645 Luria</p> <p>Stob. 3.10.68</p>
<p>(h) οἱ τῶν φειδωλῶν παῖδες ἀμαθέες γινόμενοι, ὥσπερ οἱ ὀρχησταὶ οἱ ἐς τὰς μαχαίρας ὀρούοντες, ἦν ἐνὸς μούνου &lt;μῆ&gt; τύχῳσι καταφερόμενοι, ἔνθα δεῖ τοὺς πόδας ἐρεῖσαι, ἀπόλλυνται χαλεπὸν δὲ τυχεῖν ἐνός· τὸ γὰρ ἵχνιον μούνον λέλειπται τῶν ποδῶν οὕτω δὲ καὶ οὗτοι, ἦν ἀμάρτωσι τοῦ πατρικοῦ τύπου τοῦ ἐπιμελέος καὶ φειδωλοῦ, φιλέουσι διαφθεῖρεσθαι.</p>	<p>If they turn unlearned, the children of thrifty people perish just like the dancers who plunge among the swords and fall when they miss the one and only place where they must plant their feet. This place is difficult to hit upon, for only a small track is left behind for the feet, and in the same way if these people miss the careful and thrifty mould [impression, engraved mark] of their fathers, they are wont to destroy themselves. (<i>my translation</i>)</p> <p>Democritus, fr. B228 DK = fr. D92 Taylor = fr. 629 Luria</p> <p>Stob. 3.16.18</p>

Infected by an evil that dwells profuse and diffuse in its innermost nature as a temporary material compound, human shape becomes permanently vulnerable. It carries hidden diseases inside, νοσήματα καὶ πάθη that await the right environmental circumstances to emerge in morbidly pathological forms (c). The circumstances that call forth these κακά—turning them from latent possibilities inherent in generic human shape into malignant realities that affect particular instances of human shape—are both (1) external and (2)

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experience as imagined by Democritus, the recurrence of certain material circumstances results predictably in thought that is poorly sharpened. Education consists of reforming human shape (the shape of the soul in particular) such that it becomes minimally susceptible to such moments of dullness, i.e. minimally liable to misperceive its environment in ways likely to prove destructive.

internal. (1) Sometimes, we fall ill primarily as a result of foreign matter striking us from the outside and disfiguring our shape (e.g. when tigers attack or we stumble into deep water). (2) Other times, the primary cause of disease is internal: particles within our shape move in ways that threaten its integrity unnecessarily (e.g. when we hallucinate a tiger and respond by running scared into a body of deep water, even though we cannot swim: our emotional reaction to the imaginary tiger finds kinetic expression in behavior that precipitates disintegration needlessly).

While there is little that human shape can do to control (1) what impinges on it from the outside world (i.e. what foreign εἶδωλα it meets and must respond to emotively in any particular moment in time),<sup>74</sup> it can exert significant control over (2) its inner state (i.e. the condition of its soul, an atomic compound whose mutable mixture necessarily influences how it perceives and responds to whatever stimuli the environment happens to provide).<sup>75</sup> Lacking the insight that illness is internal as well as external—that κακά are a function of our internal reaction(s) as much as external circumstances—men naively pray for health (ὕγιειν) as though it were a purely external benefit arising utterly outside their control (d). Ignoring their opportunity to anticipate disease (which we all carry latent) and mitigate its effects through prophylactic alteration of their internal state, they let the shape of that state evolve purely—and unnecessarily—by chance (e). Chance may be kind to them, feeding the integrity of their shape well at its rich table,<sup>76</sup> but the odds are against this because of the diseases latent in that shape (c). These diseases arise chiefly

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<sup>74</sup> See the discussion on pages 332-347 above (citing fr. 472a Luria).

<sup>75</sup> See note 68 above, citing fr. 460 Luria.

<sup>76</sup> See the discussion of fr. 759 Luria on pages 236-252 above.

from the soul, which is not inclined to be satisfied with the small, simple pleasures that the body requires (d)—pleasures that arise from maintaining basic physical integrity. Left to develop its shape purely by chance, the soul of the lucky human survivor easily desires more and more of whatever pleasures it encounters *en route* to survival, until it passes the point of safety and destroys the integrity of its shape with the unlimited desire for more—ή τοῦ πλέονος ἐπιθυμία (g).

While it is conceivable that the lucky survivor might stumble ἀμαθής upon the moral habits necessary to control his pleasures and keep them from being dangerous, it is no safe bet that he will. Consider the children of misers that Democritus discusses in (h): they might fortuitously inherit the τύπος of their parents, avoiding potentially lethal φιληδονία without conscious exertion (in the form of education that would displace their ἀμαθία), but this outcome is unlikely. Circumstances conspire to deform the shape of these naively ascetic children, inundating them with pleasures that tempt them away from the strait and narrow path whose existence they do not even perceive until they have fallen in love with some particular pleasure and cultivated its recurrence to the point of destroying themselves.<sup>77</sup> As long as they possess no internal psychic defenses against φιληδονία, no means for rejecting pleasure before it turns to potentially lethal pain, their integrity is never safe. Assuming they are lucky survivors, escaping the acute disasters (κῆρες, ἀμηχανία) inherent in generic human experience (a), every particular pleasure that they experience recommends potentially deadly φιληδονία to them as an unqualified,

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<sup>77</sup> χαλεπὸν δὲ τυχεῖν ἑνός (i.e. ἔνθα δεῖ τοὺς πόδας ἐρεῖσαι) ... ἣν ἀμάρτωσι τοῦ πατρικοῦ τύπου τοῦ ἐπιμελὲος καὶ φειδωλοῦ, φιλέουσι διαφθεῖρεσθαι (h).

unlimited good.<sup>78</sup> Ignorant that chance delivers many very different outcomes, they sit at its table heedlessly, partaking of pleasures *ad libitum* without reflecting that too much of any particular one might prove fatal (and that people do not always perceive the fatal dosage of any seeming pleasure before ingesting it).

What the lucky survivor needs is some conscious strategy for avoiding the danger to which his success exposes him (i.e. a some predictably recurring psychic impression that directs his shape towards the necessary pleasure of eating without allowing it to be lured into the unnecessary pain of gluttony). In the world as Democritus perceives it, the lucky survivor cannot cheat death forever. Impressed by his successful avoidance of acute danger, he cannot help cultivating moral habits that lead him away from pain (e.g. things that remind him of tigers) and towards pleasure (e.g. things that remind him of food). He cannot help the fact that his necessary fear of pain and love for pleasure will at some point beguile him into moral mistakes (when some medicine necessary for his integrity is bitter, or some poison dangerous to his integrity is sweet). But he can take steps to make those mistakes minimally harmful to him, minimally likely to dissolve his physical integrity before it must dissolve naturally, as all compound ῥυσμοί in the early atomist διάκοσμος do. He can hedge the bets he must make every time he decides to avoid a particular pain or embrace a particular pleasure. This hopeful reality appears throughout the Democritean ethical corpus, implicit in contrasts like the one that we have

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78 Behold ἡ κακία πολύχυτος καὶ δαψιλῆς οὖσα τοῖς πάθεσιν (c): the pleasure of surviving disaster under particular circumstances naturally leads to human moral habits calculated to cultivate the recurrence of these circumstances (see page 318 above). But the issue of these experiments in particular instances remains uncertain (such that my pleasure in eating yesterday is no guarantee of my pleasure today).



just seen Democritus make between the ἀνοήμονες who trust themselves blindly to luck and the δαήμονες who rely instead on wisdom (e).<sup>79</sup> How can the lucky survivor join the company of these δαήμονες? Democritus has an answer for this question, a prescription for cultivating reliable human happiness:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>my translation</i> )
(i) ἀνθρώποισι γὰρ εὐθυμία γίνεται μετριότητι τέρψιος καὶ βίου συμμετρίῃ· τὰ δ' ἐλλείποντα καὶ ὑπερβάλλοντα μεταπίπτειν τε φιλεῖ καὶ μεγάλας κινήσιας ἐμποιεῖν τῇ ψυχῇ. αἱ δ' ἐκ μεγάλων διαστημάτων κινούμεναι τῶν ψυχῶν οὔτε εὐσταθέες εἰσὶν οὔτε εὐθυμοί. ἐπὶ τοῖς δυνατοῖς οὖν δεῖ ἔχειν τὴν γνώμην καὶ τοῖς παρεοῦσιν ἀρκέεσθαι τῶν μὲν ζηλουμένων καὶ θαυματομένων ὀλίγην μνήμην ἔχοντα καὶ τῇ διανοίᾳ μὴ προσεδρεύοντα, τῶν δὲ ταλαιπωρεόντων τοὺς βίους θεωρεῖν, ἐννοούμενον ἃ πάσχουσι κάρτα, ὅπως ἂν τὰ παρεόντα σοι καὶ ὑπάρχοντα μεγάλα καὶ ζηλωτὰ φαίνεται, καὶ μηκέτι πλειόνων ἐπιθυμῶντι συμβαίνει κακοπαθεῖν τῇ ψυχῇ. ὁ γὰρ θαυμάζων τοὺς ἔχοντας καὶ μακαριζομένους ὑπὸ τῶν ἄλλων ἀνθρώπων καὶ τῇ μνήμῃ πᾶσαν ὥραν προσεδρεύων ἀεὶ ἐπικαινουργεῖν ἀναγκάζεται καὶ ἐπιβάλλεσθαι δι' ἐπιθυμίην τοῦ τι πρήσσειν ἀνήκεστον ὧν νόμοι κωλύουσιν. διόπερ τὰ μὲν μὴ δίζεσθαι χρεῶν, ἐπὶ δὲ τοῖς εὐθυμέεσθαι χρεῶν, παραβάλλοντα τὸν ἑαυτοῦ βίον πρὸς τὸν τῶν φαυλότερον πρησσόντων καὶ μακαρίζειν ἑωτὸν ἐν-	Human beings experience cheerfulness [ <i>lit.</i> a good state of mind, soul, or spirit] by limiting their pleasure and maintaining due proportion in life. For instances of lack and surfeit are wont to change the soul and create great movements in it, and souls moved over great intervals are not well-founded or cheerful [ <i>in a good state</i> ]. For this reason it is necessary to keep one's mind on things that are possible and to be satisfied with things as they are, holding little memory of people that are envied and admired and refusing to set your thought on them. Instead you should contemplate the lives of those that fare miserably, reflecting on their extreme suffering so that your present circumstances and possessions may seem great and enviable, and your soul may no longer suffer harm through its desire for more. For the one who admires people that have things and are considered happy by other men dwells all the time on his mental impression of them. Always he is forced to devise new things, attempting because of his desire to do something pernicious that laws forbid. For this reason you should not desire things but become content with them, comparing your life

79 See also fr. 32 Luria (where τύχη is contrasted with φρόνησις / ὀξυδεκείη), fr. 609 Luria (where ἀναλησιή is contrasted with φρόνησις), and 759 Luria (where τύχη is contrasted with σωφροσύνη). As Democritus offers them, these contrasts assume that people can consciously cultivate moral habits that avoid unnecessary evil outcomes (e.g. sickness resulting from gluttony) without precluding necessary good ones (e.g. the health that comes from eating).

<p>θυμεύμενον ἃ πάσχουσιν, ὁκόσῳ αὐτέων βέλτιον πρήσσει τε καὶ διάγει. ταύτης γὰρ ἐχόμενος τῆς γνώμης εὐθυμότερόν τε διάξεις καὶ οὐκ ὀλίγας κῆρας ἐν τῷ βίῳ διώσσαι, φθόνον καὶ ζῆλον καὶ δυσμενίην.</p>	<p>with the life of those who fare worse and blessing your happiness as you ponder what they suffer, how much better you fare than they do. Keeping this state of mind, you will live more cheerfully and will drive back<sup>80</sup> not a few ills in life: envy, rivalry, and enmity.</p> <p>Democritus, fr. B191 DK  = fr. D55 Taylor  = fr. 657 Luria</p> <p>Stob. 3.1.210</p>
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In previous chapters, we have seen how Democritus describes human psychology—how the worldview of the early atomist διάκοσμος offers him resources for understanding and illustrating what happens when human individuals and communities come into being as material shapes, grow to maturity, age into senescence, and die.<sup>81</sup> This fragment takes that description of human life—a description that aims to portray humanity accurately as it exists collectively and individually, in general and in particular—and uses it to provide a prescription for living well, i.e. for maximizing human exposure to the state of being

80 For comparanda justifying my choice of words here, I refer the reader to LSJ, s.v. διωθέω, and to the translation offered by Diels, who renders this verb (correctly in my view) as *verscheuchen*. Some mistakenly translate the verb as though it meant simply *to avoid*—e.g. *respingere* (Krivushina) or *избегнуть* (Luria). Coming from the Latin *averto* (see LS s.v.), Taylor's *avert* is much better (and technically correct) but still not strong enough in my view, since modern English usage of that verb allows too much leeway for a careless reader to presume that Democritus here imagines the εὐθυμος evading or preventing κῆρες when the atomist's language has him confronting and displacing them physically—e.g. the way soldiers confront enemy defenses on the battlefield (Herodot. 9.102; Xen. *Cyropaed.* 7.5.39; Polyb. 11.1.12) or the way flooding rivers displace salt water where they run into the ocean (Polyb. 4.41.4). The point at issue here is important. Democritus' εὐθυμος is not a naïve saint who remains utterly untouched by dangerous human emotion: he is a wise soldier who knows how to neutralize its battalions, a savvy engineer who knows how to dam its incoming tides.

81 For the Democritean perspective on the ψυχή as it exists in individual organisms (e.g. individual human beings), see chapter 2.3-4. For the Democritean perspective on the ψυχή as it exists in human collectives historically (as societies germinate and develop over time), see chapter 3.2-3.

that Democritus here calls εὐθυμία.<sup>82</sup> This state of being exists in the human soul, θυμός being another word for the part or parts of human shape that permit and facilitate the way that shape adapts and evolves in response to external stimuli. It arises (γίνεται) when pleasure is limited (μετρίότητι τέρψιος)—by means of a material process that Democritus describes much as we would expect him to, given what we know about his outlook on human psychology.

Like every process in the early atomist διάκοσμος, this one is driven by material necessity (ἀνάγκη). Of necessity human shape always finds itself swimming more or less intact in a sea of evolving physical circumstances. Of necessity these circumstances impress themselves upon it, and it expresses the resulting impressions as movement (both internal and external as soul-atoms interact with body-atoms and external atoms to move the σκῆνος that gives a particular human shape coherence). Some circumstances impress human shape with its lack of something (τὰ ἐλλείποντα), motivating it to move toward that which it perceives itself to want. Others impress it with surfeit (τὰ ὑπερβάλλοντα), motivating it to express kinetic avoidance or indifference toward that of which it already possesses more than enough. If human shape is not careful, it lets this generic reality—

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82 Here it is helpful to remember that Democritus does not use particular words definitively (to establish precisely what the general referent must be in every particular instance) or exclusively (such that he cannot use different words to gesture toward the same referent). In Democritus' formulation (see fr. 563 Luria, quoted on page 256), words are arbitrary signs pointing toward phenomena that exist independent of them: thus there is not necessarily any hard distinction between θυμός and ψυχή in Democritean thought, between φρόνησις and εὐθυμία (and other, similar words Democritus uses to designate what happens to human shape when it retains its integrity without unnecessary suffering: Arius Didymus' catalogue of different Democritean words for happiness remains extant in Stob. 2.7.31 = fr. 742 Luria). What matters for Democritus is not the identity of any particular word, but his audience's ability to use it as a window onto empirical reality—the material phenomena that Epicureans unfairly accuse him of denying.

its natural tendency to perceive lack and surfeit—lure it into destructive habits, when it perceives other shapes around it suffering lack or surfeit *well* and becomes dangerously fascinated with attempting to reproduce their experience as its own. Of necessity, the human shape fascinated with some particular circumstance cannot help dwelling on its memory (μνήμη) of that circumstance: it is forced (ἀναγκάζεται) to use its impression of success to develop new moral habits (ἐπικαινουργεῖν ... καὶ ἐπιβάλλεσθαι δι' ἐπιθυμίην τοῦ τι πρήσσειν) from which it hopes to derive the success it sees other shapes enjoying (or facilitating for shapes like its own). Here it runs directly into the trap we have just discussed (a, b, c, f, g, h): every human success contains inherent in itself the seeds of potentially disastrous failure (a, b); the human shape that cultivates an unlimited appetite for the pleasure of success suffers unnecessary (f) harm (κακοπαθεῖν), when the outcome of following a particular emotion toward some pleasure or away from some pain proves unexpectedly hurtful to it in some particular instance.<sup>83</sup>

Here it is useful to recall the inventors of the mule<sup>84</sup> and the primitives who learn beneficial moral habits from animals.<sup>85</sup> Impressed by material circumstances in their vicinity that appear favorable (pleasant), these ἄνθρωποι cultivate the recurrence of those circumstances in ways that they expect to prove more beneficial than harmful to human shape (their own and that of others around them). In hindsight, we remember these naive innovators as successful (μακαριζόμενοι) because their experiments (ἐπικαινουργεῖν) turned out well for humanity, but this happy outcome was not inevitable: consider what

83 As the children of thrifty folk discover when they miss the τύπος of their parents (h).

84 See fr. 561 Luria, quoted on page 229.

85 See fr. 559 Luria, quoted on page 190.

might happen to the man whose experience with domestic horses inspired him to attempt to domesticate the zebra or the hippopotamus.<sup>86</sup> Democritus' ethical teaching exists to confront the empirical reality that innovations are often more destructive to the integrity of human shape (individual and collective) than beneficial. The same restless ἐπιθυμία that gives us civilization in the last chapter afflicts us with unnecessary pain and suffering in this one—unnecessary κακοπαθεῖν that Democritean education aims to correct via psychic reformation whose outcome is to blunt desire for innovation enough that the human shape does not pursue it with reckless abandon, eating at the polytelic table of τύχη rather than the simple but self-sufficient table of σωφροσύνη (fr. 759 Luria).

Democritus' moral injunction for the lucky survivor in (i) is simple: focus your mental reflection (γνώμη) on the desirable things you already have (τὰ παρόντα σοι καὶ ὑπάρχοντα) rather than the desirable things you might have (things that make others in your vicinity envied and admired ὑπὸ τῶν ἄλλων ἀνθρώπων). Cultivate the habit of directing psychic desire—the ἐπιθυμία infecting every human shape—toward things that are already part of your particular circumstances. Resist the temptation to emulative envy

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86 We know Democritus confronted the reality of negative innovation directly: the general principle that good and evil arise from the same material circumstances appears clear in fr. 33 Luria (b). Discussing the historical process of trial and error whereby humanity changes its primitive animal νόμοι into modern humane ones, the Epicurean Lucretius imagines primitive soldiers attempting to use many different wild animals as cavalry, proving by pleasant and unpleasant experience that horses work where bulls, boars, and lions do not (5.1297-1349). It is quite possible that Lucretius borrows this particular account of positive and negative innovation directly from Democritus: he offers it as coming from another author, whom he does not identify as Epicurus (5.1341-1346). Even if Democritus is not the source for this particular story, as he might not be, it is definitely one that he would endorse. Sometimes, the urge to innovate keeps us alive and victorious on the battlefield—e.g. when we ride horses and the other side does not (or shows less skillful horsemanship). Other times, that same urge destroys us—e.g. when we attempt to ride bulls, boars, or lions onto the same battlefield. Lucretius' story of failed domestication thus fits right into the Democritean world-view that emerges in this chapter, which shows the evil face of ἐπικαινουργεῖν (i) as chapter 3 shows its good face.

and admiration by comparing yourself not with other survivors who fare better than you but with those who fare worse (φauλότερον). Impressed with the positive gap between your circumstances and those of people faring worse (instead of the negative gap between your circumstances and those of people faring better), you will be happy (εὐθυμέεσθαι), i.e. maximally content with whatever lot the swirling vortex of material necessity grants you and minimally likely to endanger your integrity in that lot by attempting to improve it heedlessly, beyond its inherently limited capacity for improvement (a, b). You will respect the native integrity of your particular human shape and guard it prudently against the material circumstances that threaten it with unnecessary pain and suffering. You will eat what you need instead of what you (or others around you) may want, comparing the modest spread on your prudent table favorably with harsh famine at the table of τύχη rather than the deceptive abundance that is also there. Unlike the hapless children of misers (h), you will avoid falling so much in love with the pleasure of desire that you cultivate the recurrence of certain material instances of it without any limit, risking loss of the goods that necessity makes possible and available<sup>87</sup> for you in pursuit of foreign goods that she may not deliver (at least not in the form you imagine).<sup>88</sup> You will not exceed the βίου συμμετρίη that allows human shape to experience the full range of its necessary developmental trajectory from birth to maturity to death. The state of your

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87 τὸ παρεόν (g); τὰ δυνατά, τὰ παρεόντα, τὰ ὑπάρχοντα (i).

88 ἀφ' ὧν ἡμῖν τὰγαθὰ γίγνεται, ἀπὸ τῶν αὐτῶν τούτων καὶ τὰ κακὰ ἐπαυρισκοίμεθ' ἅν (b); διόπερ τὰ μὲν μὴ δίζεσθαι χρεῶν (i).

mind (θυμός, γνώμη, ψυχή)<sup>89</sup> will not be that evil state<sup>90</sup> that desires pain and suffering<sup>91</sup> which are not necessary to maintain the integrity of human shape. Keeping this state of mind as you avoid the Charybdis of acute disaster (fatal tiger attacks, death by drowning) will leave your shape minimally vulnerable to the Scylla of chronic longing for unlimited success—the φιληδονία (4.2.2a<sub>5</sub>) and ἐπιθυμία (g, i) that also wreck human shape.

Here as throughout the Democritean corpus, human shape (ῥυσμός)—along with all of its parts (σκήνος, θυμός, ψυχή, νόος, γνώμη)—is portrayed as something material. Moral behavior exists materially, when certain clouds of atoms relate to one another kinetically in ways that human beings like Democritus can describe verbally as good (ἀγαθόν) or bad (κακόν). Success and failure are material outcomes, the physical results of particular material circumstances occurring in particular places at particular times. When Democritus talks about movements in the soul—e.g. the μεγάλαι κινήσεις caused by instances of lack and surfeit in (i)—it seems clear that he refers to actual physical movements in a material entity. Consider these familiar testimonia:

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89 Notice that Democritus makes no attempt to differentiate definitively between these words: in (i) he uses all three interchangeably in one form or another to talk about the same material phenomena (human ῥυσμοί that integrate, grow by assimilation and adaptation, and disintegrate when particular clouds of atoms and void interact in the context of a κόσμος). In light of fr. 563 Luria, this makes perfect sense and supports the thesis that Democritean thought shows coherence and consistency even if it is extant only in scattered fragments: see note 82 above.

90 ἢ τῆς γνώμης κακοθηγίῃ (f).

91 μόχθος καὶ ταλαιπωρίῃ (f); κακοπαθεῖν (i).

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
<p>(j) περὶ δὲ τοῦ φρονεῖν ἐπὶ τοσοῦτον εἶρηκεν ὅτι γίνεται συμμέτρως ἐχούσης τῆς ψυχῆς κατὰ τὴν κρῆσιν· ἐὰν δὲ περίθερμός τις ἢ περίψυχρος γένηται, μεταλλάττειν φησί. δι' ὃ τι καὶ τοὺς παλαιοὺς καλῶς τοῦθ' ὑπολαβεῖν ὅτι ἐστὶν ἀλλοφρονεῖν. ὥστε φανερόν, ὅτι τῇ κράσει τοῦ σώματος ποιεῖ τὸ φρονεῖν, ὅπερ ἴσως αὐτῷ καὶ κατὰ λόγον ἐστί, σῶμα ποιοῦντι τὴν ψυχὴν.</p>	<p>Concerning thought, Democritus says merely that “it arises when the soul's composition is duly proportioned.” But if one becomes excessively hot or cold, he says, thinking is transformed; and it was for some such reason, the ancients well believed, that the mind became “deranged.” Thus it is clear that he explains thought by the composition of the body—a view perhaps not unreasonable in one who regards the soul itself as corporeal. (<i>Stratton</i>)</p> <p>Democritus, fr. A135 DK = fr. 113 Taylor = fr. 460 Luria</p> <p>Theophr. <i>De Sensu</i> 58</p>
<p>(k) ὁ δὲ Φαβωρίνος ... λόγον τινὰ τοῦ Δημοκρίτου παλαιὸν ὥσπερ ἐκ καπνοῦ καθελὼν ἡμαυρωμένον οἷος ἦν ἐκκαθαίρειν καὶ διαλαμπρύνειν, ὑποθέμενος τοῦτο δὴ τοῦτιδήμιον ὃ φησι Δημόκριτος «ἐγκαταβυσσοῦσθαι τὰ εἶδωλα διὰ τῶν πόρων εἰς τὰ σώματα καὶ ποιεῖν τὰς κατὰ ὕπνον ὄψεις ἐπαναφερόμενα· φοιτᾶν δὲ ταῦτα πανταχόθεν ἀπιόντα καὶ σκευῶν καὶ ἱματίων καὶ φυτῶν, μάλιστα δὲ ζώων ὑπὸ σάλου πολλοῦ καὶ θερμότητος οὐ μόνον ἔχοντα μορφοειδεῖς τοῦ σώματος ἐκμεμαγμένας ὁμοιότητας» (ὡς Ἐπίκουρος οἶεται μέχρι τούτου Δημοκρίτῳ συνεπόμενος, ἐνταῦθα δὲ προλιπὼν τὸν λόγον), «ἀλλὰ καὶ τῶν κατὰ ψυχὴν κινημάτων καὶ βουλευμάτων ἐκάστῳ καὶ ἡθῶν καὶ παθῶν ἐμφάσεις ἀναλαμβάνοντα συνεφέλκεσθαι καὶ προσπίπτοντα μετὰ τούτων ὥσπερ ἔμψυχα φράζειν καὶ διαγγέλλειν τοῖς ὑποδεχομένοις τὰς τῶν μεθιέντων αὐτὰ δόξας καὶ διαλογισμοὺς</p>	<p>Favorinus ... advanced an old argument of Democritus. Taking it down all blackened with smoke, as it were, he set about cleaning and polishing it. He used as foundation the familiar commonplace found in Democritus that spectral films penetrate the body through the pores and that when they rise they make us see things in our sleep. These films that come to us emanate from everything—from utensils, clothing, plants, and especially from animals, because of their restlessness and their warmth. The films have not only the impressed physical likeness in contour of an animal—so far Epicurus agrees with Democritus, though he drops the subject at this stage—but they catch up and convey by attraction spectral copies of each man's mental impulses, designs, moral qualities, and emotions. When they strike the recipient thus accompanied, they speak to him, as if they were alive, and report to him</p>



καὶ ὁρμάς, ὅταν ἐνάρθρους καὶ ἀσυγχύτους φυλάττοντα προσμίζῃ τὰς εἰκόνας».	<p>the thoughts, reasoning, and impulses of those from whom they escape, whenever the copies are still preserved whole and undistorted till contact is made. (<i>Minar</i>)</p> <p>Democritus, fr. A77 DK  = fr. 133a Taylor  = fr. 476 Luria</p> <p>Plut. <i>Quaest. Conv.</i> 8.10.2 p. 734f-735a</p>
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These are just two of many explicit testimonia in the early atomist corpus<sup>92</sup> that illustrate Democritus' conception of the human shape as something corporeal: a material body (σκῆνος, σῶμα) animated by a material soul (θυμός, ψυχή, νόος, γνώμη) that exerts some determinative influence over the way in which the entire compound entity (ῥυσμός, κρῆσις) responds to physical stimuli in its environment. Moral experiences<sup>93</sup> arise and evolve in this shape over time as it responds kinetically to the material impressions its environment makes upon it, impressions mediated through continual waves of corporeal εἶδωλα that access the soul through pores in the body. Moral experiences are necessary and inevitable, generically speaking: the same ἀνάγκη that creates man in a particular geographical location with a certain number of fingers<sup>94</sup> obliges him to receive material impressions from his environment and respond to them. Necessity's law of attraction (*like seeks like*)<sup>95</sup> means that this environment inevitably offers us things like ourselves—including other people, whose circumstances reach us as εἶδωλα recommending certain

92 For more like these, see page 174 and the discussion on pages 227-232 above (of which the present discussion represents a reprise). Consider also the materialist discussion of pleasure in 4.2.2.

93 φρονεῖν, ἀλλοφρονεῖν (j); τὰ κατὰ ψυχὴν κινήματα καὶ βουλευματα ἐκάστωι καὶ ἥθη καὶ πάθη (k).

94 See fr. 103 Luria, quoted on pages 125-137 above.

95 See fr. 316 Luria, quoted on page 127 above.

behaviors to us as pleasant and desirable (when we perceive them flourishing at the rich table of *τύχη* and conceive the desire to pull up a chair there ourselves).

There is no avoiding the necessary reality that human shape encounters things in its environment and selectively cultivates what it likes: we will embrace things we like and flee things we do not.<sup>96</sup> That is how we avoid the Charybdis of acute disaster, an immediately bitter pain that we naturally shun.<sup>97</sup> But we do not have to embrace and flee things blindly, following our desire heedlessly until it proves unexpectedly, unpredictably deadly in some particular instance. We do not have to be the mindless dolts who trust the evolution of their shape to luck (e), the foolish people who pray for health and then do nothing to cultivate it (d), or the unlucky children of thrifty people who fall in love with their own destruction (h). Democritus gives us a method (i) for taming the Scylla of unlimited desire—a materialist *διδασχὴ* that moulds our plastic *ῥυσμός*,<sup>98</sup> transforming it so that it becomes minimally vulnerable to any harm arising from material instances of pleasure its environment may offer.

Democritus' method (i) does not make moral hazard disappear: remember that life is necessarily fraught with *κῆρες* and *ἀμηχανία* (a), *νοσήματα* and *πάθη* (c) that we can treat with more or less temporary success but never perfectly heal (since that would mean unmaking the necessary mortality of our compound material shape). It merely improves

96 See fr. 734 Luria: κατ' αὐτὸν (Δημόκριτον) ... εἶναι κριτήρια ... αἰρέσεως δὲ καὶ φυγῆς τὰ πάθη· τὸ μὲν γὰρ ὧι προσοικειούμεθα, τοῦτο αἰρετόν ἐστιν, τὸ δὲ ὧι προσαλλοτριούμεθα, τοῦτο φευκτόν ἐστιν (Sext. *Adv. math.* 7.140).

97 Speaking generically: our natural tendency to avoid tigers does not mean that we never confront them willingly in particular instances, any more than the natural tendency for human beings to have five fingers on each hand means that six-fingered men are impossible (fr. 103 Luria).

98 See fr. 682 Luria: ἡ διδασχὴ μεταρυσμοῖ τὸν ἄνθρωπον, μεταρυσμοῦσα δὲ φυσιοποιεῖ (Clem. *Strom.* 4.151; Stob. 2.31.65; Theodoret. 4.1, p. 100 Räder).

our odds of doing well, helping our shape find its most stable (εὐσταθής) and well-disposed (εὐθυμός) form—a form that leaves it minimally vulnerable to the vast psychic movements that Democritus finds responsible for unnecessary moral shipwreck (i). Simplified to its most basic form, Democritus' διδασχὴ looks like this: obliged as you are to witness material circumstances around yourself and cultivate the recurrence of those you like, guide your perception towards those things least likely to harm you. Like the things around you that are least likely to kill you prematurely. Pleasure is something you cannot avoid, a poison you must take. So take the smallest and most infrequent doses of it that you can,<sup>99</sup> forcing yourself to push away from the deceptively rich table of τύχη by deliberately impressing on your mind the worst of what that table has to offer. Of course you will see its best, too, e.g. in the circumstances of those people around you whom others envy and admire (i), but you should not let their εἶδωλα become anything more than a fleeting ripple in your mind. Erase the impression they make on you by directing your thought (γνώμη) constantly toward the circumstances of the unsuccessful (i).

See that human life is uniformly short and miserable (a, c). Rub your face in this reality constantly. Impress it upon your soul until it becomes a μνήμη reshaping your ῥυσμός, a recurring psychic πάθος that drives you to eat at the lean table of σωφροσύνη instinctively (even though the material instances of pleasure there may appear few and unimpressive, at least initially, to someone who has eaten well from the abundant spread of τύχη). In offering this advice, Democritus is simply acting on the observation that

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99 See fr. 757 Luria: τῶν ἡδέων τὰ σπανιώτατα γινόμενα μάλιστα τέρπει (Stob. 3.10.37).

people who conscientiously prepare themselves for illness (a likely outcome to human life) and death (an inevitable one) are more likely to cope well with these circumstances than their counterparts who cherish naive hopes of avoiding all suffering until it finds them at last, unwary and unready. People who impress upon their souls the reality that every pleasure is sometimes poisonous are less surprised by particular instances of this reality—and thus less likely to be harmed by them—than people who naively, foolishly assume that human experience includes some πάθη whose outcome is always wholly positive (ἀγαθόν), a position which Democritus consistently undermines.<sup>100</sup>

In light of the foregoing, it appears that Vlastos (1945, 1946) is correct to describe Democritus' great psychic movements (i) as physical phenomena, *contra* Taylor (1967, 1999). In explicit terms, it is very plausible—not implausible, as Taylor (1999, 233) maintains—that Democritus originally intended expressions such as μεγάλοι κινήσεις (i) and αἱ δ' ἐκ μεγάλων διαστημάτων κινούμεναι τῶν ψυχῶν (i) to refer to physical motion (specifically cascading series of atomic collisions mediating interaction between individual human shapes and their environment). Given that Democritus speaks of the soul as a material object, deliberately construing all its conventional properties (νόμοι)<sup>101</sup> as temporary expressions of an underlying material substrate (j, k), Vlastos' position is

100 In addition to (a) and (b) in this section, consider fr. 612 Luria (wherein people experience trouble with their fellow-citizens whether or not they decide to engage in public business) and fr. 613 Luria (wherein rulers are treated unjustly in the current social ῥυθμός regardless of how they perform their duties). The summation of this somewhat pessimistic outlook on the human condition occurs in fr. 12a Luria: νόσος οἴκου καὶ βίου γίνεται ὅκωσπερ καὶ σκίηνος (Stob. 4.40.21). Disease is something that follows human shape throughout all its evolutions, always, and even the shape that eats at the table of prudence dies eventually, succumbing to the ἀμηχανία inherent in all human experience.

101 ἀρχὰς εἶναι τῶν ὅλων ἀτόμους καὶ κενόν, τὰ δὲ ἄλλα πάντα νενομίσθαι (DK68A1 = Diog. 9.44). «νόμῳ γὰρ χρoίῃ, νόμῳ γλυκύ, νόμῳ πικρόν, ἔτεῃ δ' ἄτομα καὶ κενόν» (fr. 90 Luria = Galen. *De elem. sec. Hipp.* 1.2). For more testimonia, see pages 133-145 above and (l, m) here.

already more probable than Taylor's *a priori*, and the more testimonia we examine, the more conclusive the case against Taylor becomes:

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
(l) Δημόκριτος ... «νόμωι» γάρ φησι «γλυκύ, [καὶ] νόμωι πικρόν, νόμωι θερμόν, νόμωι ψυχρόν, νόμωι χροίη, ἔτεῃ δὲ ἄτομα καὶ κενόν» (ὅπερ <ἔστι> νομίζεται μὲν εἶναι καὶ δοξάζεται τὰ αἰσθητά, οὐκ ἔστι δὲ κατ' ἀλήθειαν ταῦτα, ἀλλὰ τὰ ἄτομα μόνον καὶ τὸ κενόν). ( <i>Luria</i> )	For he says, “By convention sweet and by convention bitter, by convention hot, by convention cold, by convention colour; but in reality atoms and void.” That is to say, the sensible qualities are conventionally considered and thought to exist, but in reality they do not exist, but only atoms and void. ( <i>Taylor</i> )  Democritus, fr. B9 DK = fr. 179a Taylor = fr. 55 Luria  Sext. <i>Adv. Math.</i> 7.135
(m) σημείον δ' ὡς οὐκ εἰσὶ φύσει τὸ μὴ ταῦτα πᾶσι φαίνεσθαι τοῖς ζώοις ἀλλ' ὃ ἡμῖν γλυκύ, τοῦτ' ἄλλοις πικρόν καὶ ἑτέροις ὀξύ καὶ ἄλλοις δριμύ τοῖς δὲ στρυφνὸν καὶ τὰ ἄλλα δ' ὡσαύτως. ἔτι δ' αὐτοὺς μεταβάλλειν τῇ κρήσει κατὰ τὰ πάθη καὶ τὰς ἡλικίας ἧ καὶ φανερόν ὡς ἡ διάθεσις αἰτία τῆς φαντασίας. ( <i>DK</i> )	Proof that <the sensory qualities> are not objectively real is found in the fact that they do not appear the same to all creatures: what is sweet to us is bitter to others, and still to others it is sour or pungent or astringent; and similarly of the other <sensory qualities>. Moreover Democritus holds that 'men vary in their composition' according to their condition and age; whence it is evident that a man's physical state accounts for his inner presentation. ( <i>Stratton, adapted</i> )  Democritus, fr. A135 DK = fr. 113 Taylor = fr. 441 Luria  Theophr. <i>De sens.</i> 63-64

<p>(n) κατὰ δὲ ζώων ἔστιν ὧν φόνου καὶ μὴ φόνου ὧδε ἔχει· τὰ ἀδικέοντα καὶ θέλοντα ἀδικεῖν ἀθῶιος ὁ κτείνων, καὶ πρὸς εὐεστοῦν τοῦτο ἔρδειν μᾶλλον ἢ μὴ. κτείνειν χρή τὰ πημαίνοντα παρὰ δίκην πάντα περὶ παντὸς καὶ ταῦτα ὁ ποιῶν εὐθυμίας καὶ δίκης καὶ θάρσεος καὶ κτήσεως ἐν παντὶ κόσμῳ μέζω μοῖραν μεθέξει. <i>(DK)</i></p>	<p>Concerning the killing and not killing of some living things it stands thus: he who kills those which do or attempt to do wrong is free of punishment, and doing this contributes more to well-being than not. One should kill in every case everything which causes unlawful harm; and he who does this shall receive in every form of community a greater share of cheerfulness and justice and confidence and possessions. <i>(Taylor)</i></p> <p>Democritus, fr. 257-258 DK  = fr. D121-122 Taylor  = fr. 620-621, 745 Luria</p> <p>Stob. 4.2.15-16</p>
<p>(ο) ξενιτείη βίου αὐτάρκειαν διδάσκει· μᾶζα γὰρ καὶ στιβὰς λιμοῦ καὶ κόπου γλυκύτατα ἰάματα. <i>(Luria)</i></p>	<p>Foreign travel teaches self-sufficiency; barley-bread and straw are the pleasantest remedies for hunger and weariness. <i>(Taylor)</i></p> <p>Democritus, fr. B246 DK  = fr. D110 Taylor  = fr. 732 Luria</p> <p>Stob. 3.40.6</p>
<p>(p) χρημάτων ὄρεξις, ἣν μὴ ὀρίζεται κόρῳ, πενίης ἐσχάτης πολλὸν χαλεπώτερη· μέζονες γὰρ ὀρέξεις μέζονας ἐνδείας ποιεῦσιν. <i>(Luria)</i></p>	<p>The desire for wealth, if not limited by satiety, is much harder to endure than the most extreme poverty: for greater desires create greater lacks. <i>(Taylor)</i></p> <p>Democritus, fr. B219 DK  = fr. D83 Taylor  = fr. 631 Luria</p> <p>Stob. 3.10.43</p>

<p>(q) <i>Democritus ... (vere falsone quaerere &lt;nolu&gt;mus) dicitur se oculis privasse; certe ut quam minime animus a cogitationibus abduceretur; patrimoniam neglexit, agros deseruit incultos, quid quaerens aliud nisi vitam beatam? Quam si etiam in rerum cognitione ponebat, tamen ex illa investigatione naturae consequi volebat, bono esset ut animo. ideo enim ille summum bonum εὐθυμίαν et saepe ἄθαμβίαν appellat, id est animum terrore liberum.</i> (Luria)</p>	<p>Si dice che Democrito (non vogliamo disputare se ciò sia vero o falso) si sia privato della vista; certo è che, al fine di sottrarre il meno possibile il suo animo dalla riflessione, dispreggiò il patrimonio, abbandonò i propri campi incolti, che cos' altro cercando se non la vita beata? E se anche egli riponeva questa vita beata nella conoscenza delle realtà naturali, tuttavia, da tale indagine della natura voleva conseguire la bontà dell'animo, tant'è vero che egli denomina il sommo bene <i>euthymie</i> e spesso anche <i>athambie</i>, vale a dire: animo libero dalla paura. (Luria, Krivushina)</p> <p>Democritus, fr. A169 DK  = fr. 188a Taylor  = fr. 741 Luria</p> <p>Cic. <i>De fin.</i> 5.29.87</p>
<p>(r) δοκεῖ δὲ αὐτῶι τάδε ... τέλος δ' εἶναι τὴν εὐθυμίαν, οὐ τὴν αὐτὴν οὔσαν τῇ ἡδονῇ, ὥς ἔνιοι παρακούσαντες ἐξεδέξαντο, ἀλλὰ καθ' ἣν γαληνῶς καὶ εὐσταθῶς ἡ ψυχὴ διάγει, ὑπὸ μηδενὸς ταραττομένη φόβου ἢ δεισιδαιμονίας ἢ ἄλλου τινὸς πάθους. καλεῖ δ' αὐτὴν καὶ εὐεστῶ καὶ πολλοῖς ἄλλοις ὀνόμασι. ποιητὰ δὲ νόμιμα εἶναι, φύσει δ' ἄτομα καὶ κενόν. (Marcovich [1999])</p>	<p>His doctrines are as follows ... The end is cheerfulness, which is not the same as pleasure, as some mistakenly took it, but a state in which the soul exists calmly and stably, not disturbed by any fear or superstition or any other emotion. He calls it 'well-being' and many other names. Conventions are artificial, atoms and void by nature. (Taylor)</p> <p>Democritus, fr. A1 DK  = fr. 6 Taylor  = fr. 735 Luria</p> <p>Diog. 9.44-45; Suda s.v. εὐεστῶ</p>

<p>(s) Δημόκριτος καὶ Πλάτων κοινῶς ἐν τῇ ψυχῇ τὴν εὐδαιμονίαν τίθενται. γέγραφε δ' ὁ μὲν οὕτως «εὐδαιμονίη ψυχῆς (sc. ἔστι) καὶ κακοδαιμονίη.» «εὐδαιμονίη οὐκ ἐν βοσκήμασιν οἰκεῖ οὐδὲ ἐν χρυσῶι· ψυχὴ οἰκητήριον δαίμονος.» τὴν δ' εὐδαιμονίαν καὶ εὐθυμίαν καὶ εὖεστώ καὶ ἁρμονίαν, συμμετρίαν τε καὶ ἀταραξίαν καλεῖ. συνίστασθαι δ' αὐτὴν ἐκ τοῦ διορισμοῦ καὶ τῆς διακρίσεως τῶν ἡδονῶν, καὶ τοῦτ' εἶναι τὸ καλλιστόν τε καὶ συμφορώτατον ἀνθρώποις. (<i>Luria</i>)</p>	<p>Democritus and Plato both place blessedness in the soul. The former writes as follows: 'Blessedness and wretchedness belong to the soul'; 'Blessedness does not reside in herds or in gold; the soul is the dwelling-place of the guardian spirit'. And he calls blessedness cheerfulness and well-being and harmony, as well as proportion and freedom from trouble, and says it arises from the distinction and discrimination of pleasures, and this is the finest and most beneficial thing for people. (<i>Taylor</i>)</p> <p>Democritus, fr. A167, B170-171 DK = fr. 189, D24-25 Taylor = frr. 742, 777, 780 Luria</p> <p>Stob. 2.7.31 (<i>e Didymo Areio</i>)</p>
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Whether we examine Democritus' words on their own or in light of interpretations from ancient readers, it is clear that the human πάθη (m, r)<sup>102</sup> the atomist refers to using words like *happiness*,<sup>103</sup> *prudence*,<sup>104</sup> *self-sufficiency*,<sup>105</sup> *harmony*,<sup>106</sup> *pleasure*,<sup>107</sup> *desire*,<sup>108</sup> *lack*<sup>109</sup> and their antonyms<sup>110</sup> are material events occurring in the context of physical processes,

102 Compare νοσήματα καὶ πάθη (c).

103 εὐθυμία (n, q, r, s), εὖεστώ (n, r, s), ἀθαμβία (q), εὐδαιμονία (s). Compare εὐθυμία, εὖεστώ (i).

104 φρονεῖν (j).

105 αὐτάρκεια (o). Compare fr. 759 Luria (cited *passim* in this section): τράπεζαν πολυτελέα μὲν τύχη παρατίθῃσιν, αὐταρκέα δὲ σωφροσύνη (Stob. 3.5.26). The σωφροσύνη in fr. 759 Luria is as much a material phenomenon as τὸ φρονεῖν in (j). In fact, from Democritus' point of view (preserved clearly in 563 Luria), σωφροσύνη and φρονεῖν are just two of a potentially infinite set of arbitrary verbal signals that can be used interchangeably to refer generically to particular instances of a recurring material process (the same way ἄνθρωπος and φῶς are two words referring generically to particular instances of the recurring material process we call *man* in English).

106 ἁρμονία, συμμετρία (s). Compare μετρίότης, συμμετρίη (i).

107 ἡδονή, ἡδοναί (r, s). See section 4.2.2 above.

108 ὄρεξις (p). Compare ἐπιθυμία (g, i).

109 λιμός, κόπος (o), πενία, ἔνδειαι (p). Compare τὰ ἐλλείποντα (i).

110 κακοδαιμονία (s), φόβος (r), δεισιδαιμονία (r), κόρος (p). Compare ἡ τῆς γνώμης κακοθηγία (f), ἄλλοφρονεῖν (j), φθόνος, ζήλος, δυσμενία (i).



temporary vicissitudes that human shape experiences as it evolves in response to ἡθῶν καὶ παθῶν ἐμφάσεις (k) impressed upon it by the surrounding environment. A glance at the testimonia is sufficient to reveal the superficial truth of this observation: εὐθυμία results from killing noxious animals (n) and can also occur when a person contemplates the nature of things rather than pursue other material *negotia* (q);<sup>111</sup> αὐτάρκεια describes what happens when humanity is content to satisfy its material needs with simple material commodities (o). Closer reading of our sources shows that this nexus between material process and moral result (τέλος) is pervasive and deliberate, arising from an early atomist outlook on material reality—an outlook which deliberately construes all things αἰσθητά to humanity as temporal interactions between atoms and void (l).

Whether we are looking at a particular color, tasting a particular flavor (l, m), or having some other perceptual experience (including a particular emotional πάθος we might describe to someone else using a word like εὐθυμία), Democritus makes us participants in a material process: our temporal physical shape receives material impressions (εἶδωλα, τύποι, ἐμφάσεις) from other shapes like it in its environment and responds kinetically. From the perspective of an observer external to some particular instance of this process, any value in it remains opaque: the necessary association and dissociation of atoms in the void is neither black nor white, neither sweet (γλυκύ) nor

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<sup>111</sup> Even if legends about the lives of early philosophers are always historically problematic (as Cicero himself recognizes), they often demonstrate how a particular philosopher lived out his own doctrine. See Chitwood (2004). The legend Cicero remembers (q) portrays Democritus following an extreme version of the advice he gives in (i), editing his perceptual experiences ascetically in order to avoid harming himself unnecessarily. This confirms the historical accuracy of our reading of Democritean ethics (but does not prove it beyond the possibility of refutation) by showing that it was a reading shared by ancient readers (with better access to the Democritean oeuvre than we moderns enjoy).

bitter (πικρόν), neither good (ἀγαθόν) nor bad (κακόν); it simply exists (l, m).<sup>112</sup> It is only when we enter the process as participants that it acquires value: atoms of a particular kind strike us (a particular material body) in a particular way at a particular time—precipitating a particular kinetic reaction in us that we indicate for others and ourselves generically by using words like *black*, *bitter*, or *bad*. Inasmuch as human material constitution (κρῆσις) varies over time, experiencing different vicissitudes in the cosmic whirl of necessity that carries it from birth to death, so our perceptions of value and ensuing kinetic responses vary over time and between individuals (m).<sup>113</sup> We do not all see the same colors, taste the same flavors (m), or receive the same benefits and/or deficits<sup>114</sup> from the material compounds of atoms and void that strike us along our path from birth to death. And that which appears sweet and life-sustaining to an individual at one moment may appear bitter and deadly to him in another (when his material circumstances change, as they inevitably do).

Over the course of human experience, individual and collective, we observe an

112 ἀφ' ὧν ἡμῖν τὰγαθὰ γίγνεται, ἀπὸ τῶν αὐτῶν τούτων καὶ τὰ κακὰ ἐπαυρισκοίμεθ' ἄν, τῶν τε κακῶν ἐκτὸς εἴημεν (b). Good and bad result from the same generic material things experiencing the same generic material processes (which Democritus refers to with words like ἀνάγκη). Deep water is neither good nor bad in itself, generically: its value in particular instances depends on variable material circumstances—the state of the weather and the state (κρῆσις, ῥυσμός) of particular animals in it.

113 Aristotle addresses this position, which Democritus shares with others in the Critical Tradition, in *Metaph.* 4.5.1009b1-15: ὁμοίως δὲ καὶ ἡ περὶ τὰ φαινόμενα ἀλήθεια ἐνίοις ἐκ τῶν αἰσθητῶν ἐλήλυθεν. τὸ μὲν γὰρ ἀληθὲς οὐ πλήθει κρίνεσθαι οἶονται προσήκειν οὐδὲ ὀλιγότῃ, τὸ δ' αὐτὸ τοῖς μὲν γλυκὺ γενομένοις δοκεῖν εἶναι τοῖς δὲ πικρόν, ὥστ' εἰ πάντες ἔκαμνον ἢ πάντες παρεφρόνουν, δύο δ' ἢ τρεῖς ὑγίαινον ἢ νοῦν εἶχον, δοκεῖν ἂν τούτους κάμνειν καὶ παραφρονεῖν τοὺς δ' ἄλλους οὐ· ἔτι δὲ καὶ πολλοῖς τῶν ἄλλων ζώων τάναντία [περὶ τῶν αὐτῶν] φαίνεσθαι καὶ ἡμῖν, καὶ αὐτῷ δὲ ἐκάστωι πρὸς αὐτὸν οὐ ταῦτα κατὰ τὴν αἴσθησιν αἰεὶ δοκεῖν. ποῖα οὖν τούτων ἀληθῆ ἢ ψευδῆ, ἄδηλον· οὐθὲν γὰρ μᾶλλον τάδε ἢ τάδε ἀληθῆ, ἀλλ' ὁμοίως. διὸ Δημόκριτός γε φησιν ἦτοι οὐθὲν εἶναι ἀληθὲς ἢ ἡμῖν γ' ἄδηλον. ὅλως δὲ διὰ τὸ ὑπολαμβάνειν φρόνησιν μὲν τὴν αἴσθησιν, ταύτην δ' εἶναι ἀλλοίωσιν, τὸ φαινόμενον κατὰ τὴν αἴσθησιν ἐξ ἀνάγκης ἀληθὲς εἶναι φασιν (fr. 77, 79-80 Luria).

114 τὰ δ' ἐλλείποντα καὶ ὑπερβάλλοντα (i).

emergent historical regularity: particular material outcomes recur as individual people repeatedly see color, taste flavor, experience emotions, and share their perceptual experiences with other human shapes in their vicinity (e.g. through verbal expression). Impressed by the recurrence of its perceptual experience, humanity comes up with generic ways (νόμοι) of reacting to it, including the νόμος of using verbalizations like χρομή (l) and εὐθυμή (i, n, q, r, s) to refer generically to the outcomes of particular material processes that occur and recur—as people repeatedly observe dangerous animals, kill them, and experience a powerful emotion (n). Individuals cultivate private νόμοι that shape their individual experience (i.e. the way they perceive their personal environment and respond kinetically to it). In the legend preserved by Cicero, Democritus cultivates private νόμοι designed to separate himself from *negotia* whose issue in his experience is *terror* (q). Communities similarly propagate νόμοι that shape their collective experience (i.e. the way they perceive their public environment and respond kinetically to it). The last chapter discusses various important communal νόμοι, e.g. language<sup>115</sup> and the laws and customs that pertain to murder (n), child-rearing,<sup>116</sup> and political authority.<sup>117</sup>

From Democritus' perspective, νόμοι are plastic just like the ῥυσμοί that produce them and evolve in response to them. Habits individual and collective come and go, changing with time and circumstance just as human shape does (m). The only thing that remains the same is the eternal interchange of atoms and void that keeps on generating

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115 See the discussion of fr. 563 Luria on pages 255-270.

116 See the discussion of fr. 562, 723, and 724 Luria on pages 188-200, 208-209, 236-249.

117 See the discussion of fr. 613 and 688 Luria on pages 221-224.

κόσμοι that produce ῥυσμοί that produce νόμοι (l, m). In the case of human ῥυσμός, pleasure is necessarily the material experience driving how νόμοι arise: whether on our own or in community, we cannot help feeling pleasure (or the lack of it) in particular circumstances and responding with positive cultivation (or negative avoidance) of those circumstances that knows no clear limits.<sup>118</sup> We also cannot help the fact that simple adherence to this natural heuristic—embrace every pleasure without limit as you flee every pain—proves historically disastrous, when the πολυτελής table of blind chance delivers an outcome that destroys our individual or collective integrity (fr. 759 Luria). In this environment, ethics becomes a matter of recognizing which habits yield the least dangerous pleasures in human experience and cultivating those habits preferentially: these will necessarily be habits limiting pleasure, for reasons we can see. As temporal shapes holding on to a tenuous physical integrity (a, b) in a sea of constantly evolving material circumstances (b, m), we want to make our νόμοι minimally liable to expose us to unnecessary μόχθος καὶ ταλαιπωρίη (c)—the untimely κακοπαθεῖν (i) that occurs when foolish people cultivate νόμοι whose material consequences are deep-seated psychic impressions<sup>119</sup> driving them to pursue natural desires without limit (f, g, i, p).<sup>120</sup>

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118 Our existence as animate material shapes in a material environment mandates that we experience perception and respond to it in ways that lead us toward death. We cannot avoid that necessity, no matter what we do. But we can condition ourselves so that we experience it differently. Determined by φύσις, we nevertheless retain the ability to exert willful change on our circumstances through διδασχῇ, which changes our shape (fr. 682 Luria). Our moral will is limited, but it is not non-existent: we must die, but we need not die of gluttony. We can make death beautiful for ourselves even though we cannot make it disappear from human experience.

119 In the language Democritus uses in (i), such an impression would be a memory (μνήμη) that the individual deliberately watches (προσεδρεύω) with his thought (διάνοια).

120 ὁκόσα δὲ μόχθου καὶ ταλαιπωρίας χρήζει καὶ βίον ἀλγύνει, τούτων οὐκ ἱμεῖρεται τὸ σκῆνος, ἀλλ' ἡ τῆς γνώμης κακοθηγίη (f). ἡ τοῦ πλέονος ἐπιθυμία τὸ παρεὸν ἀπόλλυσι (g). ἐπὶ τοῖς δυνατοῖς οὖν δεῖ ἔχειν τὴν γνώμην καὶ τοῖς παρεοῦσιν ἀρκέεσθαι ... ὅπως ἂν τὰ παρεόντα σοὶ καὶ ὑπάρχοντα μεγάλα

Because material human shape varies over time and between individuals (m) and incorporates necessary liability to sudden and unpredictable death (a, c), Democritus cannot tell us precisely what habits to pursue in the particular circumstances where we find ourselves at any given moment. Not knowing what our particular internal and external circumstances are at any particular moment in time and space, he cannot give simple, explicit instructions for preserving human integrity from untimely ruin—e.g. *eat only five measures of honey each day to avoid falling prey to the deadly vice of gluttony*. The clear universal reality that human shape is necessarily mortal does not make the particular incidence of any individual shape's mortality clear or universal: we do not all die the same way, and our individual deaths occur in material circumstances that vary unpredictably. For Democritus, this lack of parity between generic universals and their particular historical instances is not a problem to be confronted with precise prediction: he does not advise us to cultivate good habits by foreseeing precise outcomes accurately (such that I eat five tablespoons of honey today because I reckon that four or six would upset my precisely calculated βίου συμμετρίας). Instead of equipping me to foresee and consciously forfend every particular instance of untimely death that arises in my material circumstances—a task he repeatedly rejects as impossible<sup>121</sup>—he aims to make me maximally resistant to all material threats against my integrity, the vast majority of which

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καὶ ζηλωτὰ φαίνεται, καὶ μηκέτι πλειόνων ἐπιθυμέοντι συμβαίνει κακοπαθεῖν τῇ ψυχῇ (i).  
 χρημάτων ὄρεξις, ἣν μὴ ὀρίζεται κόρῳ, πενίης ἐσχάτης πολλὸν χαλεπωτέρη (p).

121 There are numerous fragments that repeat this refrain. Here are some we have already cited elsewhere: γινώσκειν τε χρή, φησίν, ἄνθρωπον τῷδε τῷ κανόνι, ὅτι ἐτεῆς ἀπήλλακται (fr. 48 Luria). δηλοῖ μὲν δὴ καὶ οὗτος ὁ λόγος, ὅτι ἐτεῆι οὐδὲν ἴδμεν περὶ οὐδενός, ἀλλ' ἐπιρυσμὶν ἐκάστοισιν ἡ δόξις (fr. 49 Luria). ἐτεῆι δὲ οὐδὲν ἴδμεν· ἐν βυθῷ γὰρ ἡ ἀλήθεια (fr. 51 Luria). τὸ χρήζον οἶδεν, ὁκόσον χρήζει, ὁ δὲ χρήζων οὐ γινώσκει (fr. 561a Luria).

neither he nor I will ever perceive clearly. This is an important point to notice.

Like Democritus' concept of material necessity (ἀνάγκη) or order (κόσμος) or shape (ῥυσμός),<sup>122</sup> his recipe for human happiness (i) is generically indicative (*cultivate this general attitude for this general result*) rather than particularly predictive (*cultivate this particular attitude for this particular result*). Just as the atomist does not affect to know the precise outcome of material necessity or order or shape in any individual instance,<sup>123</sup> so he never pretends to know exactly what material circumstances will result in happiness for any particular human shape (individual or collective). Instead, he uses his diacosmic vision of generic human shape to offer a generic strategy for improving its mortal experience in particular instances, regardless of outcome (which in time is always disintegration and death). His strategy is not a fixed, linear path leading humanity away from known disaster. Instead, it is an adjustable, non-linear technique<sup>124</sup> for teaching humanity how to develop whatever νόμοι they need in order to swim through unknown and unknowable disaster—the ἀμηχανία that are inevitable parts of human experience (a). The happiness (εὐθυμία) that results from applications of this technique is inevitably contextual, subjective, and temporary: like color, taste, and other perceptual experiences, it varies between individuals and over time (as the material circumstances of particular individuals evolve). I do not experience happiness today exactly the way I did yesterday,

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122 See chapter 2.2-3 above.

123 Observing that like goes with like as a general rule is not the same thing as knowing precisely how that sorting process occurs in every particular instance. Observing regularity in the universe is not the same thing as denying irregularity, unless you are an unwary Epicurean misreading Democritus.

124 Lanzillota (2001) refers to it aptly as a *cuadro axiológico*. The word Democritus himself uses in fr. 33 Luria (see page 313) is μηχανή.

and your particular path to happiness is never going to be precisely identical to mine. But Democritus thinks he can tell both of us how to be always as happy as we can ever be, as happy as our particular material circumstances will permit at any given moment.

The atomist's recipe for happiness presupposes that human shape (ῥυσμός) invariably exists within certain limits. No matter what its particular circumstances are at any given moment in time, humanity is always mortal (a temporary cloud of atoms moving relative to one another in the void) and mutable (experiencing vicissitudes that evolve as it moves internally and externally in response to environmental stimuli). It always responds to environmental stimuli kinetically with attraction or avoidance via a material process we describe conventionally with words like *emotion* (πάθος), *pleasure* (ἡδονή, τέρψις) and/or *desire* (φιληδονία, ἐπιθυμία, ὄρεξις). The νόμοι that humanity cultivates, no matter what they are, arise as conventional expressions of this process as it occurs in particular historical circumstances. In concrete terms, human beings invariably find themselves in environments replete with stimuli external (food) and internal (hunger) that oblige them to develop habits (various cultural traditions for hunting, gathering, and cooking food to sate their hunger). So far, so good. This is the story we have been examining over and over since chapter 3. The problem we face now is that the incidence between generic human limits (*we all die*) and particular historical circumstances (*I am hungry right now*) is uncertain (*will eating this honey make me die prematurely? how much should I eat to preserve my health?*). Democritus offers a generic method for addressing this uncertainty whenever it arises (*you should avoid cultivating the thought*

*that more pleasure is always better, that limitless desire leads to more happiness: find things in your personal circumstances that impress deep on your mind the unpleasant falsehood of this thought, a falsehood that appears evident in all material circumstances where human shape exists).* It does not matter what my particular material circumstances are: they will always offer me material instances of emotion, pleasure, and desire, and I should always take as little of every material instance as I can, being maximally content with what I have and minimally anxious to acquire more.

Democritean happiness is not being born in a particular kind of society or eating particular foods or having any particular life-experiences of any kind. It does not matter what particular material circumstances deliver emotion, pleasure, and desire to us: what matters is that we limit our exposure to those circumstances, conscientiously preferring healthy poverty to dangerous wealth as a general rule (o, p).<sup>125</sup> Good νόμοι, individual and collective, will always cultivate such poverty. How do humans develop such νόμοι? Democritus offers a cogent answer entirely consistent with his atomist physics.

We should actively look for circumstances in our vicinity that impress upon our perceptual sensibility (θυμός, ψυχή) the idea (μνήμη) that every emotion, pleasure, and desire is poisonous. Holding this idea continually in our conscious thought (i),<sup>126</sup> we will

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125 The sweetest food is simple (o), and unlimited desire is more harmful than πενίη (p). The moral virtue of poverty is a recurring theme in the ethical testimonia. See fr. 651-655, 657a, and 737 Luria, esp. fr. 653: ἤν μὴ πολλῶν ἐπιθυμέις, τὰ ὀλίγα τοι πολλὰ δόξει· σμικρὰ γὰρ ὄρεξις πενήν ἰσοσθενέα πλούτῳ ποιεῖ (Stob. 4.24.25). Compare (i): ἐπὶ τοῖς δυνατοῖς οὖν δεῖ ἔχειν τὴν γνώμην καὶ τοῖς παρεούσιν ἀρκέεσθαι ... ὅπως ἂν τὰ παρεόντα σοι καὶ ὑπάρχοντα μεγάλα καὶ ζηλωτὰ φαίνηται. Limiting his desire so that it becomes small (σμικρὰ ὄρεξις), the poor sage invariably achieves satiety (a subjective emotional experience) more easily, less dangerously, than the rich fool. The poor sage's material circumstances sate him, whereas the rich fool's just make him want more.

126 Democritus' phrase (i) would be μνήμην ἔχων καὶ τῇ διανοίᾳ προσεδρεύων.



instinctively seek to quench every ὄρεξις with κόρος as soon as possible (p), no matter what it is. Following this method, we will be minimally liable to stumble prematurely over the limits of our mortality, even though they remain opaque to us as to the atomist. We will not experience limitless desires that postpone κόρος indefinitely (p) at the risk of destroying our integrity (f, g, i). For better or worse, Democritus consistently imagines human perceptual experience, positive and negative, as a physical process. The ἡθῶν καὶ παθῶν ἐμφάσεις (k) that the environment impresses upon humanity are material images (the atomic effluvia referred to most often in the Democritean corpus as εἶδωλα).<sup>127</sup> The πάθη that human shape suffers in response to these impressions are material experiences (c, d, l, m, n, o). When these πάθη threaten us with destruction,<sup>128</sup> Democritus' solution is physical: change your shape<sup>129</sup> such that it does not deform itself indefinitely in pursuit of any particular πάθος; arrest the power that particular πάθη have to move you (b, i); limit your shape's experience with pleasure and desire (i, q, r, s) such that you live maximally undisturbed by waves of emotion bearing down on you from the environment *and* rising up inside you from the fragility inherent in your mortal shape (a, c).

Think of the naive stockbroker who builds a lucrative career right up to the moment of a significant market reversal. Assume that this stockbroker makes no effort to curb his attachment to the emotions that his career builds inside him until that moment.

When he receives a material impression showing him the ruin of his wealth, something

<sup>127</sup> See fr. xv, 32, 191, 200, 354, 400, 427, 436, 467, 469-479, 493a, 564, 578, 579, 798, and 828 Luria, as well as chapters 2.4 and 3.2.2 (4) above.

<sup>128</sup> ἀποπνιγῆναι (b). διαφθείρεσθαι (h).

<sup>129</sup> See fr. 682 Luria: ἡ διδασχὴ μεταρυσμοῖ τὸν ἄνθρωπον, μεταρυσμοῦσα δὲ φυσιοποιεῖ (Clem. *Strom.* 4.151; Stob. 2.31.65; Theodoret. 4.1, p. 100 Räder).

happens inside him: he feels powerful emotions (πάθη). Democritus would say that the μέζονες ὀρέξεις he has been cultivating have left him with μέζονας ἐνδείας (p), which will inevitably drive him to do something novel and desperate. That is what powerful emotions do: they move us powerfully. In the stockbroker's case, his emotions may drive him to jump off a tall building, rob a bank, or seek another person or persons to punish for his ruin—a ruin that is clearly material: all these destructive experiences deform his physical shape and the physical shape of others in his vicinity.<sup>130</sup> Democritus would say the stockbroker's soul moves through a large interval (i) when he perceives ἀμηχανία (a) suddenly: in a moment he goes from calm to crazy, stirred by the onslaught of unexpected material circumstances outside his control. But if he shaped his soul wisely, impressing it with the reality that every trade on the market is truly an encounter with death—a reality visible to him in the failure of other stockbrokers in his vicinity (i)—then his experience would be different. He would be less moved (literally) by the concrete manifestation of a ruin already foreseen. Being attacked by wild animals you perceive is not the same as being attacked where you mistakenly suppose yourself out of danger. The unexpected attack disturbs human shape with violent emotions, where the expected one does not.<sup>131</sup>

The prudent stockbroker would make a deliberate habit of noticing the mortal κίνδυνος (b) inherent in his material circumstances. Realizing that he can never depend on the wealth at luck's table (fr. 759 Luria), he would deliberately insulate his soul from

130 ὁ γὰρ θαυμάζων τοὺς ἔχοντας καὶ μακαριζομένους ὑπὸ τῶν ἄλλων ἀνθρώπων καὶ τῇ μνήμῃ πᾶσαν ὥραν προσεδρεύων ἀεὶ ἐπικαινουργεῖν ἀναγκάζεται καὶ ἐπιβάλλεσθαι δι' ἐπιθυμίην τοῦ τι πρήσσειν ἀνήκεστον ὧν νόμοι κωλύουσιν (i).

131 τέλος δ' εἶναι τὴν εὐθυμίαν ... καθ' ἣν γαλινῶς καὶ εὐσταθῶς ἡ ψυχὴ διάγει, ὑπὸ μηδενὸς ταραττομένη φόβου ἢ δεισιδαιμονίας ἢ ἄλλου τινὸς πάθους (r).

it, cultivating habits that preserve his bodily integrity—a naturally limited thing (f, o)—rather than habits that increase his psychic addiction to desire, a thing that has no natural limits (d, f, g, h, i).<sup>132</sup> Occupying itself preferentially with simple somatic desires (f, o) sated easily (p), his soul would become εὐθυμος καὶ εὐσταθής (i)—less likely to cause unnecessary damage to human integrity, whether his own or that of communities where he participates. Neither the naive stockbroker nor his society benefits when he becomes a desperate hedonist (i), broadcasting ἡθῶν καὶ παθῶν ἐμφάσεις (k) whose most likely outcome is jealous rivalry (when luck blesses his naivete and goads others into dangerous emulation)<sup>133</sup> or hopeless despair (when luck turns against him or those attempting to reproduce his experience for themselves).<sup>134</sup> The ἀνοήμων hurts both himself and those around him<sup>135</sup> when he cultivates νόμοι whose material result is blind hedonism, the pursuit of ἡδοναί without any διορισμός (s)—i.e. ἡδοναί that move the human soul more

132 See also fr. 776 Luria, quoted on page 328. Perceiving the ruin that occurs at the table of chance, his soul would naturally find its εὐδαιμονίη and κακοδαιμονίη somewhere else, in the perception of things separate from the βροσκήματα καὶ χρυσός (s) that the table of chance offers unpredictably.

133 The danger of jealousy is a theme that Democritus visits over and over in the extant ethical corpus, where he condemns δυσμενίη (fr. 657, 679 Luria), στάσις (fr. 570, 712 Luria), φιλονικίη (fr. 595, 679 Luria), and φθόνος (fr. 570, 657, 679, 679a Luria) as evil, recommending instead the ὁμονοίη (fr. 633, 713 Luria) and ὁμοφροσύνη (fr. 711 Luria) that make good things possible (δυνατόν in fr. 713).

134 See fr. 799 Luria: ἐλπίδες αἱ τῶν ὀρθῶν φρονεόντων ἐφικταί, αἱ δὲ τῶν ἀξυνέτων ἀδύνατοι (Stob. 4.46.18). Those who rely on luck are always vulnerable to sudden unforeseen disaster. Their thinking is not the φρονεῖν that emerges from proper material κρήσις (j), but the psychic κακοθηγή that desires unnecessary pain and suffering (f).

135 See fr. 698 Luria: φαύλων ὁμιλίη συνεχῆς ἔξιν κακίης συναύξει (Stob. 2.31.90). Disease is a material condition (fr. 12a, 776a Luria). Associating with sick people (φαῦλοι) means taking their disease into ourselves (through effluvia entering our pores), increasing the condition of disease that dwells already in us (cf. the νοσήματα καὶ πάθη we all carry inside in fr. 776a). Associating with the plague-ridden increases the plague inside us; associating with the envious increases our envy. As medicine intervenes to suppress the symptoms of one disease, so moral education intervenes to suppress those of the other: ἱατρικὴ μὲν γὰρ κατὰ Δημόκριτον σώματος νόσους ἀκέεται, σοφίη δὲ ψυχὴν παθῶν ἀφαιρεῖται (fr. 779 Luria = Clem. *Paed.* 1.6). Another fragment worth noting here comes from the small corpus of ethical aphorisms credited to the shadowy figure Democrates: μεγάλα βλάπτουσι τοὺς ἀξυνέτους οἱ ἐπαινεόντες (DK68B113, Democrat. 81).

and more, creating inner psychic storms that eventually manifest externally as destructive emotional πάθη capable of killing individuals and communities prematurely.<sup>136</sup>

#### **Democritus' ΔΙΟΡΙΣΜΟΣ ΤΩΝ ΗΛΟΝΩΝ (4.2.4)**

In light of the foregoing, how do Dyroffians like Taylor (1967, 1999) miss the blatant materialism pervading the Democritean ethical corpus? The best way to answer that question is to consider Taylor's most recent response (1999) to Vlastos (1945, 1946) regarding the nature of κρῆσις in the material soul (fr. 460 Luria = 4.2.3j above):

[Democritus'] theory provides no account of what it is for the soul-atoms to be harmoniously balanced other than this, that being harmoniously balanced is being in whatever state they are in when the person whose soul they constitute is in a state of cheerfulness. There is no independent characterization of harmonious balance such that we can say 'harmonious balance consists in one's soul-atoms having such and such physical properties, and it is a law of nature that whoever has his soul in that state is thereby in a state of cheerfulness' (233).

This interpretation of the ethical fragments is factually correct: nowhere in them does Democritus attempt to define εὐθυμία as a property arising from particular atoms in a definite spatiotemporal relationship to one another.<sup>137</sup> The μηχανή he offers for achieving cheerfulness in fr. 657 Luria (4.2.3i above) does not rely on individual atoms having any properties that we can know minutely or definitely: instead it is all about their generic

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<sup>136</sup> These are the πάθη we refer to with words like *hatred*, *jealousy*, and *ill-will*: see note 133 above.

<sup>137</sup> The atomist does not say, for instance, that the cheerful human shape has precisely 10,000 perfectly spherical soul-atoms mixed uniformly throughout the body such that they remain equidistant from one another at all times. His method for achieving happiness (i) does not require anyone to know anything particular about the individual atoms composing any particular human soul. The physical interval through which the material soul of our imaginary naïve stockbroker moves in 4.2.3 above is not precisely measured or measurable. That does not make it immaterial.

properties, collective properties that emerge when they combine to create human shape that we can perceive. As Taylor notes elsewhere (1967), particular historical expressions of these generic properties are not perfectly regular in real life or the Democritean ethical corpus (which mirrors real life in making pleasure an ambiguous thing, a phenomenon whose valence varies with time and circumstance). But none of this denies the ethical materialism documented in Democritus by Vlastos and confirmed by this study.

From the perspective of this study, it appears Taylor and Vlastos are both correct, and their disagreement arises from a correctable error in historical attempts to understand and interpret Democritus. Vlastos examines the testimonia and observes, quite correctly, that Democritus is a materialist whose physical perspective consciously informs his ethics. Interpreting this information in light of the conventional reading of Democritean physics,<sup>138</sup> a rigid determinist reading Vlastos never explicitly challenges or refutes,<sup>139</sup> Taylor defends the atomist against the imputation that he must approach human ethics deliberately as a rigid determinist, an imputation unsupported in the testimonia, as Taylor correctly observes.<sup>140</sup> This study solves the dissonance of these two correct positions by interpreting Democritus as an exponent of the Critical Tradition, an historical tradition of thought wherein marriages of physics and ethics like the one evident in the atomist's διάκοσμος occur regularly without demanding rigid determinism. Like Democritus, the

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<sup>138</sup> See chapter 2.2.1-2 above.

<sup>139</sup> See section 4.1 above.

<sup>140</sup> If Democritus wrote his ethics as a rigid determinist then he would either be a proto-Calvinist (as he is not in the fragments extant) or he would be the schizophrenic fool derided by Diogenes Oenoandensis in 4.1 above. Forced by Vlastos to choose between these bad options, Taylor understandably opts to make the atomist an Epicurean fool, since we have no good evidence that he was an early anticipation of Calvin. This path is followed by other Dyroffians as well. See section 4.1 above.

Critical Tradition consistently treats human *mores* as material evolutions in a material universe, without denying the empirical phenomena later thinkers indicate with words like *volition*.<sup>141</sup> In fact, such phenomena appear integral to Democritus' worldview, as we might not expect if we listened too credulously to anti-Democritean criticisms offered by later thinkers (notably Aristotelians and Epicureans).

For an extremely relevant illustration of this reality, consider two generic material phenomena important in extant Democritean thought: (t) taste (fr. 441 Luria = 4.2.3m); and (u) the διορισμός τῶν ἡδονῶν Democritus is said to have identified as τὸ κάλλιστόν τε καὶ συμφωρότατον ἀνθρώποις (frr. 742, 777, 780 Luria = 4.2.3s). If we approach these phenomena from an interpretive perspective that considers the unique physical properties of individual atoms to be critically significant, we will come away frustrated and confused, thinking that Democritus contradicts himself obviously and obscenely. Witness Theophrastus' discussion of Democritus on taste, from which we abstract three important passages describing (t<sub>1</sub>) the shape of atoms whose collective impression on human shape is a perceptual experience we call *sweet*; (t<sub>2</sub>) how Democritus imagines subjectivity (the variability of individual material κρῆσις) affecting this process; and (t<sub>3</sub>) Theophrastus' criticism of the atomist:

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<sup>141</sup> See chapter 1 above.

TEXT ( <i>editor</i> )	TRANSLATION ( <i>Stratton</i> )
<p>(t<sub>1</sub>) τὸν δὲ γλυκὺν ἐκ περιφερῶν συγκεῖσθαι σχημάτων οὐκ ἄγαν μικρῶν· διὸ καὶ διαχεῖν ὅλως τὸ σῶμα καὶ οὐ βιαίως καὶ οὐ ταχὺ πάντα περαίνειν· τοὺς &lt;δ'&gt; ἄλλους ταραττεῖν, ὅτι διαδύνων πλανᾷ τὰ ἄλλα καὶ ὑγραίνει· ὑγραινόμενα δὲ καὶ ἐκ τῆς τάξεως κινούμενα συρρεῖν εἰς τὴν κοιλίαν· ταύτην γὰρ εὐπορώτατον εἶναι διὰ τὸ ταύτῃ πλεῖστον εἶναι κενόν ... (<i>Luria</i>)</p>	<p>'Sweet' consists of &lt;atomic&gt; figures that are rounded and not too small; wherefore it quite softens the body by its gentle action, and unhasteningly makes its way throughout. Yet it disturbs the other &lt;savours&gt;, for it slips in among the other &lt;atomic figures&gt; and "leads them from their accustomed ways" and moistens them. And the &lt;atomic figures&gt; thus moistened and disturbed in their arrangement flow into the belly, which is the most accessible, since empty space is there in greatest measure ...</p>
<p>(t<sub>2</sub>) ὡσαύτως δὲ καὶ τὰς ἄλλας ἐκάστου δυνάμεις ἀποδίδωσιν ἀνάγων εἰς τὰ σχήματα. ἀπάντων δὲ τῶν σχημάτων οὐδὲν ἀκέραιον εἶναι καὶ ἀμιγῆς τοῖς ἄλλοις, ἀλλ' ἐν ἐκάστῳ πολλὰ εἶναι καὶ τὸν αὐτὸν ἔχειν λείου καὶ τραχέος καὶ περιφεροῦς καὶ ὀξέος καὶ τῶν λοιπῶν. οὗ δ' ἂν ἐνῇ πλεῖστον, τοῦτο μάλιστα ἐνισχύειν πρὸς τε τὴν αἴσθησιν καὶ τὴν δύναμιν. ἔτι δὲ εἰς ὁποίαν ἔξιν ἂν εἰσέλθῃ, διαφέρειν [γὰρ] οὐκ ὀλίγον. καὶ διὰ τοῦτο τὸ αὐτὸ τάναντία καὶ τάναντία τὸ αὐτὸ πάθος ποιεῖν ἐνίστε. (<i>Diels</i>)</p>	<p>In a like manner he accounts for all the other effects of each &lt;savour&gt; by referring them to figures. But no one of all the figures is present, he holds, pure and without mixture of the others; on the contrary, there is a multitude of them in each savour, and the self-same taste includes figures that are smooth, rough, round, sharp, and so on. The preponderant figure, however, exerts the most influence upon the faculty of sense and determines the &lt;savour's&gt; effect; and, moreover, the condition in which it finds &lt;us influences the result&gt;. For it makes a great difference &lt;what our condition is&gt;, inasmuch as the same substance at times causes opposite feeling, and opposite substances cause the same feeling ...</p>
<p>(t<sub>3</sub>) ὅλως δὲ μέγιστον ἐναντίωμα καὶ κοινὸν ἐπὶ πάντων, ἅμα μὲν πάθη ποιεῖν τῆς αἰθήσεως, ἅμα δὲ τοῖς σχήμασι διορίζειν· καὶ τὸ αὐτὸ φαίνεσθαι τοῖς μὲν πικρὸν τοῖς δὲ γλυκὺ τοῖς δ' ἄλλως· οὔτε γὰρ οἶόν &lt;τε&gt; τὸ σχῆμα πάθος εἶναι οὔτε ταῦτόν τοῖς μὲν σφαιροειδὲς τοῖς δ' ἄλλως (ἀνάγκη δ' [εἴπερ] ἴσως, εἴπερ τοῖς μὲν γλυκὺ τοῖς δὲ πικρόν) οὐδὲ κατὰ τὰς ἡμετέρας ἔξεις μεταβάλλειν τὰς μορφάς,</p>	<p>But the one glaring inconsistency running through the whole account is, that he no sooner declares &lt;savours&gt; to be subjective effects in sense than he distinguishes them by their figures; and he thus points out that the same substance appears bitter to some persons and sweet to others and has still a third quality for some other group. For the figure cannot possibly be a subjective effect, nor can one and the same figure be</p>

<p>ἀπλῶς δὲ τὸ μὲν σχῆμα καθ' αὐτὸ ἐστὶ, τὸ δὲ γλυκὺ καὶ ὅλως τὸ αἰσθητὸν πρὸς ἄλλο καὶ ἐν ἄλλοις, ὥς φησιν. (<i>Luria</i>)</p>	<p>spherical for certain persons and of another shape for others (although such an assumption were perhaps inevitable if what is sweet for some is bitter for others), nor can the shapes &lt;of atoms&gt; change according to differences of state in us. And in general, the &lt;atomic&gt; figure has an absolute existence, while sweetness and the sensuous object generally, as he says, is relative and existent in something beyond itself. (<i>Stratton</i>)</p> <p>Democritus, fr. A135 DK = fr. 113 Taylor = fr. 441, 496 Luria</p> <p>Theophr. <i>De sens.</i> 65-69</p>
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Theophrastus' problem ( $t_3$ ) with the atomist's description of taste is a matter of language, specifically an issue arising from the unclear nature of the relationship between words and their referents. When Democritus invokes atomic shape to describe sweetness ( $t_1$ ) as the subjective result of one sort of atomic shape encountering another ( $t_2$ ), Theophrastus assumes that the shapes in question must be immutable and uniform, such that when the atomist describes one of them as περιφερές or σφαιροειδές he makes it a definite σχῆμα whose contours must be the same for all observers.<sup>142</sup> In Theophrastus' mind, words such as *round* or *sweet* point naturally and inevitably toward a particular objective reality that every observer must accept perforce as *roundness* or *sweetness*. When Democritus uses such words predicatively of supposedly subjective phenomena, then an objective link inherent between the words and their referents refutes ἀπλῶς ( $t_3$ ) his attempt to argue for

<sup>142</sup> οὔτε γὰρ οἷόν <τε> τὸ σχῆμα πάθος εἶναι οὔτε ταῦτόν τοις μὲν σφαιροειδὲς τοῖς δ' ἄλλως ( $t_3$ ).



subjectivity. Spheres are only ever spherical; they do not change shape as geometricians grow older or compare notes.<sup>143</sup> The moment I call any atomic shape *spherical*, it cannot be subjective, according to Theophrastus. Democritus' endorsement of the premises leading to this logical shipwreck of his theory appears evident in his assertion that the shape of individual atoms is immutable.<sup>144</sup> But this appearance is an illusion.

Breaking the spell of Theophrastus' logical refutation is useful because he makes Democritus a rigid determinist about taste (γεῦσις) exactly the way Taylor sees Vlastos making the atomist a rigid determinist about happiness (the εὐθυμία that results from a διορισμός τῶν ἡδονῶν). Explaining how Theophrastus misses Democritus' true meaning helps us see where Vlastos and Taylor (and the generations of scholars preceding them) miss it in the same way. According to Theophrastus (t<sub>3</sub>), Democritus' theory of taste assumes precise knowledge about immutable atomic shape, such that its description of τὸ γλυκύ (t<sub>1</sub>) becomes an objective formula identifying the precise σχῆμα of atoms whose incidence upon the human tongue in an objective plurality—since all substances contain different kinds of particles (t<sub>2</sub>)—causes the objective sensation we all refer to with words like *sweetness*. The atoms that cause this objective sensation are invariably *round* and *middle-sized*<sup>145</sup> in an objective way, such that a plurality of them in any tastable substance invariably means that it must taste *sweet*.<sup>146</sup> But Democritus is not talking precisely or

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143 οὐδὲ κατὰ τὰς ἡμετέρας ἔξεις μεταβάλλειν τὰς μορφάς (t<sub>3</sub>).

144 See fr. 211-248 Luria, esp. fr. 240-242 (where Democritean usage of the term ῥυσμός to designate immutable atomic shape is documented).

145 τὸν δὲ γλυκὺν ἐκ περιφερῶν συγκεῖσθαι σχημάτων οὐκ ἄγαν μικρῶν (t<sub>1</sub>).

146 οὗ δ' ἂν ἐνῆι πλεῖστον, τοῦτο μάλιστα ἐνισχύειν πρὸς τε τὴν αἴσθησιν καὶ τὴν δύναμιν, ἔτι δὲ εἰς ὁποῖαν ἔξιν ἂν εἰσέλθῃ (a<sub>2</sub>). οὔτε γὰρ οἷόν <τε> τὸ σχῆμα πάθος εἶναι (t<sub>3</sub>).

definitively about immutable atomic shape here.

Consider these testimonia:

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
(t <sub>4</sub> ) «ἐτεῆι μὲν νυν ὅτι οἷον ἕκαστον ἔστιν <ἦ> οὐκ ἔστιν οὐ συνίεμεν, πολλαχῆι δεδήλωται».	That in reality we do not know what kind of thing each thing is or is not has been shown many times. <sup>147</sup> ( <i>Taylor</i> )  Democritus, fr. B10 DK = fr. D18 Taylor = fr. 55 Luria  Sext. <i>Adv. math.</i> 7.136
(t <sub>5</sub> ) Λεύκιππος ... ὑπέθετο ... τῶν ἐν αὐτοῖς [sc. ἐν τοῖς στοιχείοις] σχημάτων ἄπειρον τὸ πλῆθος διὰ τὸ μηδὲν μᾶλλον τοιοῦτον ἢ τοιοῦτον εἶναι ... [Λεύκιππος καὶ Δημόκριτος] τῶν ἐν ταῖς ἀτόμοις σχημάτων ἄπειρον τὸ πλῆθος φασὶ διὰ τὸ μηδὲν μᾶλλον τοιοῦτον ἢ τοιοῦτον εἶναι. ταύτην γὰρ αὐτοὶ τῆς ἀπειρίας αἰτίαν ἀποδιδόασιν.	Leucippus ... held ... that the number of shapes in the elements was infinite because nothing is rather thus than thus ... [Leucippus and Democritus] say that the number of shapes in the atoms is infinite because nothing is rather thus than thus. They offer this as a reason for infinity. <sup>148</sup> ( <i>Makin, augmented</i> )  Leucippus, fr. A8 DK Democritus, fr. A38 DK = fr. 2 Luria  Simpl. in <i>Phys.</i> 28.4 (= Theophr. <i>Phys. opin.</i> fr. 8; <i>Dox.</i> 483)

147 Comparable fragments are quoted in note 121 above. That incomprehensibility of particulars is a recurring theme in the Democritean corpus.

148 This fragment is discussed above in chapter 2.2.2 (c).

<p>(t<sub>6</sub>) ὁ δὲ Δημόκριτος θέσει λέγων τὰ ὀνόματα διὰ τεσσάρων ἐπιχειρημάτων τοῦτο κατεσκεύαζεν· ἐκ τῆς ὁμωνυμίας· τὰ γὰρ διάφορα πράγματα τῶι αὐτῶι καλοῦνται ὀνόματι οὐκ ἄρα φύσει τὸ ὄνομα· καὶ ἐκ τῆς πολυωνυμίας· εἰ γὰρ τὰ διάφορα ὀνόματα ἐπὶ τὸ αὐτὸ καὶ ἓν πρᾶγμα ἐφαρμόσουσιν, καὶ ἐπάλληλα, ὅπερ ἀδύνατον ... τύχηι ἄρα καὶ οὐ φύσει τὰ ὀνόματα.</p>	<p>Democritus supported his view that names belong to things by convention by four arguments. First, that from homonymy: different things are called by the same name, so the name does not belong to them by nature. Then, that from polyonymy: if different names fit one and the same thing, they must fit one another, which is impossible ... Names, therefore, apply by chance, not by nature. (<i>Taylor</i>)</p> <p>Democritus, fr. B26 DK = fr. 167 Taylor = fr. 563 Luria</p> <p>Procl. <i>in Crat.</i> 16 p. 5, 25 Pasquali</p>
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If Democritus repeatedly says we do not know what sort each particular thing is (t<sub>4</sub>), why would he then pretend to know precisely what sweetness always is (t<sub>3</sub>)? Theophrastus would have us believe that he simply forgets one observation while making the other,<sup>149</sup> but we have good evidence (t<sub>5</sub>, t<sub>6</sub>) that this dismissive approach is not necessary or even adequate (as a fair representation of the testimonia available to us). Though the early atomists give each individual atom immutable and permanent shape, they do not make that shape one that we can perceive or indicate in any definitively objective way. On the contrary, they posit that their multiverse of infinite atoms and void contains an infinite multitude of different atomic shapes—a position they justify by their explicit ignorance of atomic shape as it exists in the particular.<sup>150</sup> In light of this position, what does

149 Theophrastus is not the last to say such things. Remember the Dyroffian Barnes (1982): “[P]hysics and ethics were so successfully compartmentalized in Democritus’ capacious mind that he never attended to the larger issues which their cohabitation produces” (535).

150 τῶν ἐν ταῖς ἀτόμοις σχημάτων ἄπειρον τὸ πλῆθος φασὶ διὰ τὸ μηδὲν μᾶλλον τοιοῦτον ἢ τοιοῦτον εἶναι (t<sub>5</sub>). This alone would be enough to mount a serious challenge to Theophrastus (t<sub>3</sub>) even without the additional witness of Proclus (t<sub>6</sub>) to drive the point home.

Democritus mean when he describes certain material shapes as sweet ( $t_1$ ,  $t_2$ )? What is the atomist indicating when he uses words like *taste* ( $t$ ) or *happiness* ( $u$ ) and then qualifies them with other words like *sweet* (γλυκύς) or *cheerful* (εὐθυμος)? The Democritean understanding of language preserved by Proclus ( $t_6$ ) facilitates a very helpful answer to such questions.

According to Democritus ( $t_6$ ), there is no objective link joining any particular word with any particular referent: the association between particular words and referents is only an arbitrary historical accident.<sup>151</sup> Thus, when the atomist describes any material shape verbally ( $t_1$ ), he is never speaking objectively in the manner of Theophrastus ( $t_3$ ). Instead he uses words subjectively, as convenient signals for pointing generally—i.e. imprecisely and indefinitely—toward his particular experience with certain particular material phenomena (referents for the words he is using). From his subjective experience with various composite atomic shapes generally marked as *honey* (μέλι), he concludes that particular instances of such shapes taste sweet sometimes and not others, depending on variable material circumstances.<sup>152</sup> His subjective description of sweetness ( $t_1$ ) is not the objective definition Theophrastus reads ( $t_3$ ). When the atomist uses words like *round* or *not too small* to describe individually imperceptible material shapes that appear sweet to him *en masse*, he is speculating subjectively—not defining objectively—and his speculation is necessarily imprecise and indefinite, since he cannot perceive individual

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<sup>151</sup> τύχηι ἄρα καὶ οὐ φύσει τὰ ὀνόματα ( $t_6$ ).

<sup>152</sup> διαφέρειν γὰρ οὐκ ὀλίγον καὶ διὰ τοῦτο τὸ αὐτὸ τάναντία, καὶ τάναντία τὸ αὐτὸ πάθος ποιεῖν ἐνίοτε ( $t_2$ ). Compare fr. 56 Luria: ἐκ τοῦ τὸ μέλι τοῖσδε μὲν πικρὸν τοῖσδε δὲ γλυκὺ φαίνεσθαι ὁ μὲν Δημόκριτος ἔφη μήτε γλυκὺ αὐτὸ εἶναι μήτε πικρὸν (Sext. *Pyrr. hypot.* 2.63).

atoms ( $t_5$ ). He observes that sweetness strikes him as a powerful sensation, penetrating others close to its instance and altering their effect upon him ( $t_1$ ). Imagining atoms as imperceptible pebbles or seeds sorting themselves inside the sieve of his body,<sup>153</sup> he guesses that the atoms whose collective impact upon him is sweetness must be like the pebbles he would call περιφερῆς, i.e. the smooth and round ones that move more easily among other pebbles than those we would describe as *rough* and *angular*. So he uses that word to describe them, not because he has impossible insight into the precise shape of individual atoms (these or any others) but because he does not. Round pebbles and seeds sifted in the sieve do not adhere to any explicit universal standard for roundness (such that I can easily infer the precise shape of one by referring to another): round atoms in the mouth of Democritus ( $t_1$ ) are no different. They are natural shapes, not mathematical ones, and the atomist does not pretend to have any precise knowledge about any of them in particular: it is only together that they leave any impression on him, and the impression they leave is inevitably subjective.

The subjectivity here is total, encompassing both language and the material experience (πάθη) that language indicates generically (imprecisely, indefinitely). What is *round* or *not too small* ( $t_1$ ) or *preponderant* ( $t_2$ ) at any given moment in time and space is a matter of evolving subjective perspective.<sup>154</sup> There being no uniform standard for round pebbles in nature,<sup>155</sup> individual pebbles can only be round as they compare to one another.

153 See fr. 316 Luria, quoted above on page 127.

154 The existence of linguistic categories like *round* or *angular* does not, for Democritus, imply objective rotundity or angularity as real empirical phenomena, independent of subjective experience ( $t_6$ ).

155 τὰ γὰρ διάφορα πράγματα τῷ αὐτῷ καλοῦνται ὀνόματι· οὐκ ἄρα φύσει τὸ ὄνομα ( $t_6$ ). *Round* can point to any number of things in nature, such that it carries no definitive objective meaning, no clear significance that exists independent of all material context (including the historical context that delivers

A particular person might find three pebbles ( $p_1, p_2, p_3$ ) such that ( $p_2$ ) seemed round in comparison to ( $p_1$ ) but not ( $p_3$ ). Likewise, the recognition of a preponderance of any particular kind of thing is necessarily a function of the individual whose perception constitutes that recognition. Unable to see clearly how composite shapes exist at the atomic level ( $t_4, t_5$ ), Democritus does not pretend to know what particular individuals will perceive at any given moment in time and space. His theory is not a predictive engine (for telling me precisely what will occur at any given moment in time and space), but a descriptive one (for showing me with words<sup>156</sup> how my human experience is at once regular and irregular, so that my personal shape may take general precautions that make these regularities and irregularities maximally helpful and minimally harmful even as outcomes of their particular incidence at any moment remain stubbornly unpredictable).

Democritus does not tell me precisely what I will perceive. He does not even explain to me in minute detail why I perceive, though he offers some thoughtful opinions about how the generic, conventional processes we indicate with words like *perception* exist recurrently ( $t_1, t_2$ ). He tells me how to respond to my perceptions—how to interpret them ( $t$ ) and live with them such that they become maximally useful and minimally harmful ( $u$ ). Significantly, the comprehensive method (μηχανή) he offers for cultivating happiness is fundamentally about perception—specifically the way we recognize and respond to all ἡδοναί ( $u$ ), not just the ones that come to us through the process Greeks

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it to us as a particularly meaningful collection of noises and/or written ciphers).  
 156 And these words need not always agree mutually, since they are not necessarily linked to whatever phenomena they indicate: εἰ γὰρ τὰ διάφορα ὀνόματα ἐπὶ τὸ αὐτὸ καὶ ἔν πρᾶγμα ἐφαρμόσουσιν, καὶ ἐπάλληλα, ὅπερ ἀδύνατον ... τύχηι ἄρα καὶ οὐ φύσει τὰ ὀνόματα ( $t_6$ ). Different historical languages are alike (as homologous expressions of human shape) but not mutually coherent or consistent (such that the verbal pictures they create become interchangeable).

call γεῦσις (t). Like taste, happiness occurs as particular individuals respond in certain ways to their material environment, an environment that is generically regular (containing things that engage the perceptual sensibilities common to every shape called human) and particularly irregular (since individuals never know what material πάθη may engage their personal perceptual sensibilities at any particular moment). Given that happiness only exists in particular material circumstances (where particular individuals discover it), the subjectivity evident in Democritus' theory of perception (t<sub>2</sub>) becomes vitally important for Democritean ethics, which make individual awareness the catalyst enabling a proper διορισμός τῶν ἡδονῶν (u).<sup>157</sup> From Democritus' perspective, each human being has a moral responsibility to familiarize himself with his unique material integrity—the evolving internal κρήσις that allows him to survive and experience *happiness*—and to cultivate νόμοι that preserve this subjective good more than they undermine it.

How do we discover this subjective good? We have already seen that pleasure constitutes a necessary but problematic signpost pointing us toward it (4.2.2), and that we must limit our pleasure to retain it, cultivating safe poverty rather than dangerous wealth (4.2.3). Now it is time to examine more closely the role of the individual in recognizing and respecting the subjective limits he must place on his own pleasure. How does the individual have moral will, according to Democritus? How does he apply the method set forth in fr. 657 Luria (4.2.3i), deliberately shaping himself to avoid exceeding the limits that define his subjective physical integrity? Several testimonia offer information we can use to improve and further illustrate the basic answer given to this question in 4.2.3:

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<sup>157</sup> See 4.2.3 on the Democritean recipe for happiness, and the discussion that follows.

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
<p>(u<sub>1</sub>) ἀνθρώποισι κακὰ ἐξ ἀγαθῶν φύεται, ἐπὶν τις τὰγαθὰ μὴ 'πιστῆται ποδηγετεῖν μηδὲ ὀχεῖν εὐπόρως, οὐ δίκαιον ἐν κακοῖσι τὰ τοιάδε κρίνειν, ἀλλ' ἐν ἀγαθοῖσιν ὧν τοῖς τε ἀγαθοῖσιν οἷόν τε χρῆσθαι καὶ πρὸς τὰ κακά, εἴ τινι βουλομένῳ ἀλκὴν.<sup>158</sup> (<i>Luria, corrected</i>)</p>	<p>Evil things grow from good among men when someone does not understand how to guide or bear the latter resourcefully.<sup>159</sup> It is not right to judge such things evil; instead one should reckon them good. And it is possible to use good things badly,<sup>160</sup> if one desires the strength to avert danger. (<i>my translation</i>)</p> <p>Democritus, fr. B173 DK = fr. D38 Taylor = fr. 34 Luria</p> <p>Stob. 2.9.2</p>
<p>(u<sub>2</sub>) τὰ μὲν καλὰ χρήματα τοῖς πόνοις ἢ μάθησις ἐξεργάζεται, τὰ δ' αἰσχρὰ ἄνευ πόνων αὐτόματα καρποῦται. καὶ γὰρ οὖν οὐκ ἐθέλοντα πολλάκις ἐξείργει τοιοῦτον εἶναι· οὕτω μεγάλης τε τῆς φυτικῆς ἐστί.<sup>161</sup> (<i>Taylor, corrected</i>)</p>	<p>Learning accomplishes fine things through taking pains, but it harvests ill-favored things spontaneously, without pains. And often it compels someone to be a certain way, even against his will; such is [the power] of great growth. (<i>my translation</i>)</p> <p>Democritus, fr. B182 DK = fr. D47 Taylor = frr. 35, 774 Luria</p> <p>Stob. 2.31.66</p>

158 There is no reason to deny the reading of the MSS (quoted above), which Diels and others emend unnecessarily. The verb βούλομαι takes an accusative object in Homer; see LSJ s.v. for references.

159 For this translation of εὐπόρως, see Hippocr. *Off.* 7 and LSJ s.v. εὐπορος.

160 In justification of this translation of πρὸς τὰ κακά, see LSJ, s.v. πρὸς (7).

161 This fragment has been emended variously by different editors. I follow Taylor because he stays closest to the MSS, which make rather good sense even if the last colon is incomplete as written. Taylor punctuates it thus: εἶναι οὕτω † μεγάλης τε τῆς φυτικῆς † ἐστί. I prefer the punctuation of Wachsmuth, who separates the problematic last colon from the rest (as above).



<p>(u<sub>3</sub>) ἔξωτικῶς μὴ πονεῖν<sup>162</sup> παῖδες ἀνιέντες οὔτε γράμματ' ἂν μάθοιεν οὔτε μουσικὴν οὔτε ἀγωνίην οὐδ' ὅπερ μάλιστα τὴν ἀρετὴν συνέχει, τὸ αἰδεῖσθαι μάλα γὰρ ἐκ τούτων φιλεῖ γίγνεσθαι ἢ αἰδῶς. (<i>Luria, corrected</i>)</p>	<p>If children neglected to take pains after the foreign fashion, they would not learn letters or music or gymnastic exercise or respect, which contains moral excellence most of all. For respect especially loves to take rise from these things. (<i>my translation</i>)</p> <p>Democritus, fr. B179 DK = fr. D44 Taylor = fr. 692 Luria</p> <p>Stob. 2.31.57</p>
<p>(u<sub>4</sub>) πάντων κάκιστον ἡ εὐπετεία παιδεῦσαι τὴν νεότητα· αὕτη γὰρ ἐστὶν ἣ τίκτει τὰς ἡδονὰς ταύτας, ἐξ ὧν ἡ κακότης γίνεται. (<i>Luria</i>)</p>	<p>Ease is the worst of all teachers for the young; for it is that which gives birth to those pleasures from which wickedness arises. (<i>Taylor</i>)</p> <p>Democritus, fr. B178 DK = fr. D43 Taylor = fr. 695 Luria</p> <p>Stob. 2.31.56</p>
<p>(u<sub>5</sub>) μηδέν τι μᾶλλον τοὺς ἀνθρώπους αἰδεῖσθαι ἑωυτοῦ μηδέ τι μᾶλλον ἐξεργάζεσθαι κακόν, εἰ μέλλει μηδεὶς εἰδήσειν ἢ οἱ πάντες ἄνθρωποι· ἀλλ' ἑωτὸν μάλιστα αἰδεῖσθαι, καὶ τοῦτον νόμον τῇ ψυχῇ καθεστάναι, ὥστε μηδὲν ποιεῖν ἀνεπιτήδειον. (<i>Luria</i>)</p>	<p>One should not feel shame before others rather than before oneself, or be more willing to do something bad if no one will know of it than if everyone will. Rather one should feel shame before oneself, and set up this law in one's heart, to do nothing unfitting. (<i>Taylor</i>)</p> <p>Democritus, fr. B264 DK = fr. D128 Taylor = fr. 604 Luria</p> <p>Stob. 4.5.46</p>

<sup>162</sup> I prefer the reading of the MSS to emendations by DK (ἔξω τί κως ἢ πονεῖν παῖδες), Wachsmuth (ζηλωτικῶς ὁμῇ πονέειν παῖδες), and Luria (ἔξω τι κῶς ἢ πονεῖν <εἰθισμένοι> παῖδες). No matter how this testimonium is read, the positive valuation of τὸ πονεῖν and τὸ αἰδεῖσθαι remains clear.

<p>(u<sub>6</sub>) Δημόκριτος [λέγει] πλείους μὲν εἶναι τὰς αἰσθήσεις τῶν αἰσθητῶν, τῷ δὲ μὴ ἀναλογίζειν τὰ αἰσθητὰ τῷ πλήθει λανθάνειν. (DK)</p>	<p>Democritus says that there are more senses than objects of sense, but since the objects of sense do not correspond [i.e., to the senses] their number is uncertain. (<i>Taylor</i>)</p> <p>Democritus, fr. A115 DK = fr. 114 Taylor = fr. 437 Luria</p> <p>Aet. 4.10.5; Stob. 1.51.4</p>
<p>(u<sub>7</sub>) ἄνθρωποι τὸν θάνατον φεύγοντες διώκουσιν.</p> <p>ἀνοήμονες θάνατον δεδοικότες γηράσκειν ἐθέλουσιν. (Luria)</p>	<p>In fleeing death men seek it.</p> <p>The unwise wish to grow old through fear of death. (<i>Taylor</i>)</p> <p>Democritus, fr. B203, B206 DK = fr. D67, D70 Taylor = fr. 797 Luria</p> <p>Stob. 3.4.77, 80</p>
<p>(u<sub>8</sub>) ἀλλὰ καὶ οἱ Ἀβδηρίται τέλος ὑπάρχειν διδάσκουσιν· Δημόκριτος μὲν ἐν τῷ Περὶ τέλους τὴν εὐθυμίαν, ἣν καὶ εὖεστώ προσηγόρευσεν. καὶ πολλάκις ἐπιλέγει «τέρψις γὰρ καὶ ἀτερπὴ οὗρος † τῶν περιηκμακώτων». <sup>163</sup> (Früchtel et al)</p>	<p>But the Abderites also teach that an end [goal, outcome] exists. In his work <i>On Execution</i>, Democritus teaches that it is cheerfulness, which he calls well-being. Many times he concludes, “Pleasure and its lack are a boundary marking things past their prime.” (<i>my translation</i>)</p> <p>Democritus, fr. B4 DK = fr. 190 Taylor = fr. 734 Luria</p> <p>Clem. <i>Strom.</i> 2.130</p>

163 On my reading, emendations of the MSS reading here (e.g. <τῶν τε νέων καὶ> τῶν περιηκμακώτων DK, <τῶν περιηκμακώτων καὶ> τῶν <οὐ> περιηκμακώτων Luria) are unnecessary, even if they do not disfigure Democritus' meaning. As it stands, the text occupies its MS line entirely and makes perfect sense, confirming other fragments on the same subject (e.g. DK68B188 and A111, quoted on page 325 above) even if it does not reproduce exactly the Democritean diction or rhetorical construction in DK68B188 (as it need not, since we have no reason to think that Democritus was careful to quote himself word for word as he expressed the same idea πολλάκις). For justification of my translating τῶν περιηκμακώτων as “things past their prime” rather than “in their prime,” see LSJ s.v. περί (III).

<p>(u<sub>9</sub>) θυμῷ μάχεσθαι μὲν χαλεπὸν· ἀνδρὸς δὲ τὸ κρατέειν εὐλογίστου. (<i>Luria</i>)</p>	<p>It is hard to fight against spirit [soul, desire, will]; but mastering it is the mark of a prudent man. (<i>Taylor; supplemented</i>)</p> <p>Democritus, fr. B236 DK  = fr. D100 Taylor  = fr. 762 Luria</p> <p>Stob. 3.20.56</p>
<p>(u<sub>10</sub>) ἔστιν οὖν τοῦ προκόπτοντος οὐ μόνον δόντα τῷ φίλῳ καὶ γνώριμον εὐεργετήσαντα μὴ φράσαι πρὸς ἑτέρους, ἀλλὰ καὶ ψῆφον ἐν πολλαῖς θέμενον ἀδίκῳις δικαίαν ... οὗτος γὰρ αὐτὸς εὐδοκιμῶν παρ' ἑαυτῷ μὴ καταφρονῶν ἀλλὰ χαίρων κάγαπῶν ὥς ἱκανὸς ὢν μάρτυς ἅμα καὶ θεατὴς τῶν καλῶν δείκνυσι τὸν λόγον ἐντὸς ἤδη τρεφόμενον καὶ ριζούμενον ἐν ἑαυτῷ καὶ κατὰ Δημόκριτον αὐτὸν «ἐξ ἑαυτοῦ λαμβάνειν τὰς τέρψιας ἐθιζόμενον». (<i>Babbitt</i>)</p>	<p>It is therefore the mark of a man who is making progress, not only when he has given to a friend or done a kindness to an acquaintance to refrain from telling of it to others,<sup>164</sup> but also when he has given an honest judgement amidst a numerous and dishonest majority ... In fact, such a man, by standing well in his own estimation, inasmuch as he feels no disdain, but only pleasure and satisfaction at the thought that he is at the same time a competent witness and observer of honourable deeds, shows that reason is already growing within him and taking root in his own self, and, in the words of Democritus, that he is “becoming accustomed to find within himself the sources of enjoyment.” (<i>Babbitt</i>)</p> <p>Democritus, fr. B146 DK  = fr. D32 Taylor  = fr. 790 Luria</p> <p>Plut. <i>De prof. in virt.</i> 10.81a-b</p>

<sup>164</sup> The good man here is one who takes pleasure in doing good himself without informing others. This is precisely the kind of goodness Democritus commends above in (u<sub>5</sub>).

<p>(u<sub>11</sub>) τὸν δὲ εὐθυμεῖσθαι μέλλοντα χρή μὴ πολλὰ πρήσσειν, μήτε ἰδίῃ μήτε ξυνῇ, μηδὲ ἄσσοι ἂν πράσσει, ὑπὲρ τε δύναμιν αἰρεῖσθαι τὴν ἑωυτοῦ καὶ φύσιν· ἀλλὰ τοσαύτην ἔχειν φυλακὴν, ὥστε καὶ τῆς τύχης ἐπιβαλλούσης καὶ ἐς τὸ πλεόν ὑπηγεομένης τῷ δοκεῖν, κατατίθεσθαι, καὶ μὴ πλέω προσάπτεσθαι τῶν δυνατῶν. ἢ γὰρ εὐογκία ἀσφαλέστερον τῆς μεγαλογκίας. (Luria)</p>	<p>He who is going to be cheerful must not do many things, either in private or in public life, and in his choice of what he does must not exceed his own nature and capacity, but must be watchful, so that when fortune seizes him and urges him further in his imagination, he sets it aside and does not attempt more than what is possible. For a good amount is safer than a great amount. (Taylor)</p> <p>Democritus, fr. B3 DK = fr. D27 Taylor = fr. 737 Luria</p> <p>Stob. 4.39.25</p>
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These fragments echo familiar themes. Good and evil consequences arise from the same material circumstances (u<sub>1</sub>).<sup>165</sup> Happiness is the goal of human existence, a goal best attained through the proper valuation of pleasure (u<sub>8</sub>)<sup>166</sup> because not every instance of pleasure is safe or happy (u<sub>4</sub>).<sup>167</sup> Implicit in these recurring themes lies the notion that people are capable of valuing pleasure differently, developing different attitudes toward it over time (as their material circumstances change) and between individuals (who are always unique in their material κρῆσις). Human moral will in this situation is always an expression of perceptual sensibility, a psychosomatic διορισμός that occurs constantly and inevitably as individual human shapes perceive phenomena in their material

165 ἀφ' ὧν ἡμῖν τὰγαθὰ γίγνεται, ἀπὸ τῶν αὐτῶν τούτων καὶ τὰ κακὰ ἐπαυρισκοίμεθ' ἂν, τῶν τε κακῶν ἐκτὸς εἴημεν (4.2.3b). τὸ αὐτὸ τάναντία, καὶ τάναντία τὸ αὐτὸ πάθος ποιεῖν ἐνίοτε (t<sub>2</sub>).

166 τέλος δ' εἶναι τὴν εὐθυμίαν, οὐ τὴν αὐτὴν οὖσαν τῇ ἡδονῇ, ὥς ἔνιοι παρακούσαντες ἐξεδέξαντο, ἀλλὰ καθ' ἣν γαληνῶς καὶ εὐσταθῶς ἡ ψυχὴ διάγει, ὑπὸ μηδενὸς ταραττομένη φόβου ἢ δεισιδαιμονίας ἢ ἄλλου τινὸς πάθους. καλεῖ δ' αὐτὴν καὶ εὐεστῶ καὶ πολλοῖς ἄλλοις ὀνόμασι (4.2.3r). τὴν δ' εὐδαιμονίαν καὶ εὐθυμίαν καὶ εὐεστῶ καὶ ἀρμονίαν, συμμετρίαν τε καὶ ἀταραξίαν καλεῖ. συνίστασθαι δ' αὐτὴν ἐκ τοῦ διορισμοῦ καὶ τῆς διακρίσεως τῶν ἡδονῶν, καὶ τοῦτ' εἶναι τὸ καλλιστόν τε καὶ συμφωρότατον ἀνθρώποις (4.2.3s).

167 See 4.2.2 above.

environment and respond with positive cultivation or negative avoidance. Confronted with this reality, there are two ways we can respond: (1) we can abandon ourselves entirely to whatever sensations we experience, eating unlimited pleasure at the table of luck and hoping that the outcome strikes us as more pleasant than not;<sup>168</sup> or (2) we can limit our exposure to pleasure, recognizing that it is not always pleasant ( $u_{11}$ ).<sup>169</sup> The fragments in this section ( $u_1$ - $u_{11}$ ) offer us additional perspective on the second option.

The most important insight lurking in these fragments is the perspective they offer on the ability of the individual person to exert significant and deliberate influence on the evolution of his material shape. How does Democritus reconcile the determinism evident in his materialist physics with the affirmation of human moral autonomy evident<sup>170</sup> in his ethics? Read against the other fragments this study has interrogated, these ( $u_1$ - $u_{11}$ ) reveal the answer to this question, confirming that the disjunction between ethics and physics in Democritus does not exist originally (before Aristotelians, Epicureans, and Dyroffians discover it there through their lack of sympathy with the Critical Tradition).

The first significant thing to notice is Democritus' perspective on learning ( $u_2$ - $u_5$ ).

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168 We have already cited fr. 759 Luria numerous times: τράπεζαν πολυτελέα μὲν τύχη παρατίθησιν, αὐταρκέα δὲ σωφροσύνη (Stob. 3.5.26). It does not stand alone in the Democritean corpus: parallel fragments worth noting are 4.2.3e and fr. 33a Luria: τύχη μεγαλόδωρος, ἀλλ' ἀβέβαιος, φύσις δὲ αὐτάρκης· διόπερ νικᾷ τῶι ἥσσονι καὶ βεβαίῳ τὸ μείζον τῆς ἐλπίδος (Stob. 2.9.5).

169 See 4.2.3 above, esp. 4.2.3i.

170 Numerous fragments confirm this observation, which is confirmed by multiple readers of the ethical fragments, e.g. Natorp (1893), Stella (1942), Mesiano (1951), Colvin (1974). From this chapter we notice the following smoking guns that evince Democritus' belief in human moral volition: γινώσκειν χρεῶν ἀνθρωπίνην βιοτὴν ἀφαυρὴν τε ἐοῦσαν καὶ ὀλιγοχρόνιον (4.2.3a); ἐπὶ τοῖς δυνατοῖς οὖν δεῖ ἔχειν τὴν γνώμην καὶ τοῖς παρεούσιν ἀρκέεσθαι (4.2.3i); ἐξωτικῶς μὴ πονεῖν παῖδες ἀνιέντες οὔτε γράμματ' ἂν μάθοιεν οὔτε μουσικὴν οὔτε ἀγωνίην ( $b_3$ ); κτείνειν χρή τὰ πημαίνοντα παρὰ δίκην πάντα (4.2.3n); τὸν δὲ εὐθυμεῖσθαι μέλλοντα χρή μὴ πολλὰ πρήσσειν ( $u_{11}$ ). Every time the atomist discusses what *should* happen, how people *should* respond to their material circumstances, he steps irrevocably outside any realm of sterile, objective observation wherein things exist unaffected and unaffectedable (i.e. without any possibility for conscious human intervention).

Recall that it is impossible to avoid learning *something* in the Democritean διάκοσμος: we are inevitably impressed by material phenomena around us, reacting kinetically with fear<sup>171</sup> or desire<sup>172</sup> as we perceive things to be bad or good for us.<sup>173</sup> In keeping with his consistent observation that human experience finds the same phenomena beneficial and harmful,<sup>174</sup> Democritus recognizes that the material consequences of inevitable μάθησις are both καλά and αἰσχροῦ (u<sub>2</sub>). Good consequences result when learning involves hard work,<sup>175</sup> while bad arise when that work is omitted.<sup>176</sup> Notice that Democritus never tries to define these things (μάθησις, πόνοι, τὰ καλὰ χρήματα, τὰ αἰσχροῦ) very precisely, as the particular results of particular material circumstances (e.g. being born in a particular place or pursuing a particular course of study under a particular master). Instead, the atomist focuses consistently on generic process, with hard work emerging as something worth cultivating for its generic utility, not for any particular outcome. That utility is the *respect*<sup>177</sup> that loves to arise inside the shape of students who make hard work part of their learning experience.<sup>178</sup>

According to Democritus (u<sub>5</sub>), this respect ought to arise as something deliberate, personal, and internal—i.e. the result of an individual developing and expressing his own

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171 φόβος (4.2.3r), *terror* (4.2.3q).

172 φιληδονία (4.2.2a<sub>5</sub>), ἐπιθυμία (4.2.2a<sub>4</sub>, 4.2.3g, 4.2.3i), ὄρεξις (4.2.3p).

173 See pages 364-369 above and remember that Democritus refers to human shape metaphorically as a πολυπαθὲς κακῶν ταμειῖον in 4.2.3c. The ἀμαθία that appears in testimonia like 4.2.3h is not a failure to absorb *any* information from the surrounding environment: it is a failure to respond appropriately to the information one inevitably absorbs.

174 Witness the discussion of 4.2.3b, (t<sub>2</sub>), and (u<sub>1</sub>) on the previous page.

175 πόνοι (u<sub>2</sub>), πονεῖν (u<sub>3</sub>).

176 τὰ δ' αἰσχροῦ ἄνευ πόνων αὐτόματα καρποῦται (u<sub>2</sub>); πάντων κάκιστον ἢ εὐπετεῖν παιδεῦσαι (u<sub>4</sub>).

177 αἰδώς (u<sub>3</sub>), αἰδεῖσθαι (u<sub>3</sub>, u<sub>5</sub>).

178 μάλα γὰρ ἐκ τούτων φιλεῖ γίγνεσθαι ἢ αἰδώς (u<sub>3</sub>).

conscious νόμος<sup>179</sup> as a deliberate counterweight to the unpremeditated νομίζοντα thrust upon him constantly by external circumstances (including people in his immediate environment).<sup>180</sup> Applying himself diligently to whatever tasks happen to be available (particulars are irrelevant), the good student naturally becomes aware of his own unique capacity and incapacity as it exists in particular circumstances. Established in his soul by repetitive πόνος, this *personal awareness* permits him to discern for himself what things are possible and impossible, fitting and unfitting (ἀνεπιτήδειον), καλά and αἰσχροῦ for his unique material integrity as it exists at any given moment.<sup>181</sup> In the extant corpus of early atomist testimonia, Democritus and his doxographers refer to this subjective personal awareness of particular good and evil repeatedly using many different words.<sup>182</sup> It is the subjective φρόνησις that varies in tandem with the individual's material composition

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179 ἀλλ' ἐωυτὸν μάλιστα αἰδεῖσθαι, καὶ τοῦτον νόμον τῇ ψυχῇ καθεστάναι, ὥστε μηδὲν ποιεῖν ἀνεπιτήδειον (u<sub>5</sub>).

180 ἀνθρώποισι τῶν ἀναγκαίων δοκεῖ εἶναι παῖδας κτήσασθαι ἀπὸ φύσιος καὶ καταστάσιός τινος ἀρχαίης ... τῷ δὲ δὴ ἀνθρώπῳ νομίζον ἤδη πεποιήται, ὥστε καὶ ἐπαύρεσίν τινα γίνεσθαι ἀπὸ τοῦ ἐκγόνου (fr. 562 Luria, quoted on page 188). Rather than receive νομίζοντα like this one passively from his environment, the wise man receives them actively, cultivating psychic impressions of his own that deliberately, consciously, and explicitly restrict the power of others to shape his soul with implicit, unpremeditated traditions: μηδὲν τι μᾶλλον τοὺς ἀνθρώπους αἰδεῖσθαι ἐωυτοῦ (u<sub>5</sub>). Compare the atomist's exhortation to avoid minding the moral *exemplum* of those others deem successful (4.2.3i).

181 The subjectivity of that integrity makes Democritus' ethics generically indicative (*work hard to discover what good things you value*) rather than particularly prescriptive (*work hard to achieve what people around you value*). Democritus can tell me that hard work is necessary if I am to develop the self-awareness (αἰδώς, φρόνησις, σωφροσύνη, σοφίη, ὀξυδερκεῖη) to discern good and bad for myself. He cannot tell me exactly what tasks to pursue (*should I work more at letters, music, or gymnastic exercises?*) or precisely what *hard work* means for me in every circumstance (*should I practice three hours a day or eight?*). Finding my unique aptitudes and locating the difference between πόνος and εὐπετεῖη in particular instances is my work, not his—a matter for individual experimentation rather than universal prescription. See 4.2.3 above and 4.2.5 below.

182 Compare the variety of different words the atomist uses to indicate happiness: *ideo enim ille summum bonum* εὐθυμίαν *et saepe* ἀθαμβίαν *appellat* (4.2.3q); καλεῖ δ' αὐτήν καὶ εὐεστῶ καὶ πολλοῖς ἄλλοις ὀνόμασι (4.2.3r). As with *happiness*, so with *respect* what matters for Democritus is not the particular word one uses (t<sub>6</sub>) but the material phenomena one indicates with it. In the case of *respect*, the phenomena all the words (αἰδώς, φρόνησις, σωφροσύνη, σοφίη, ὀξυδερκεῖη) point to is an inner moral sensibility that allows the aware individual to maximize personal control over his own happiness.

(4.2.3j); the σωφροσύνη that keeps the prudent from gorging themselves dangerously at luck's table (fr. 759 Luria); the σοφίη that shapes the experienced<sup>183</sup> the way luck forms the mindless (4.2.3e); the ὀξυδερκείη that nullifies luck's victory over prudence in the battle to control human affairs (fr. 32 Luria). In (u<sub>10</sub>) it appears as an interior λόγος that allows the individual to take pleasure from himself rather than rely on his external circumstances (which are fundamentally irregular, unpredictable, and unreliable as they exist particularly, no matter what words we use to indicate their generic regularity). Learning to take pleasure from himself rather than his fickle circumstances (u<sub>10</sub>), the self-aware, self-respecting man naturally insulates that self—his integrity, his soul, and its happiness—from the kind of accidents that ruin human shape unnecessarily (see 4.2.3). Minding his own subjective nature rather than the appearances around him, he naturally avoids attempting things outside his capability, even if they tempt him (u<sub>11</sub>). Such is the power of habits that arise from learning with πόνοι: they ingrain themselves deep in us, giving us an interior φυλακή (u<sub>11</sub>) that is strong enough to exert significant determinative influence over the momentary psychic impulses we call *will* (or ἐπιθυμία).<sup>184</sup>

In the world-order imagined by Democritus, having a material soul (θυμός, ψυχή) characterized by perceptual sensibility means having moral will (ἐπιθυμία) that evolves as circumstances impinge on us and elicit reactions. The wise man cultivates νόμοι that let him oppose the automatic, unpremeditated kinetic expressions of his soul's sensibility:

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183 How does one become one of the δαήμονες (4.2.3e)? One cultivates hard work (u<sub>2</sub>-u<sub>4</sub>).

184 καὶ γὰρ οὖν οὐκ ἐθέλοντα πολλάκις ἐξείργει τοιοῦτον εἶναι· οὕτω μεγάλης τε τῆς φυτικῆς ἐστὶ (u<sub>2</sub>); θυμῶι μάχεσθαι μὲν χαλεπὸν· ἀνδρὸς δὲ τὸ κρατέειν εὐλογίστου (u<sub>9</sub>).



remember τὰ δ' αἰσχροῦ ἄνευ πόνων αὐτόματα καρποῦται (u<sub>2</sub>). The human will perceives something and automatically wants it, wants to avoid it, or has no interest in it: here the wise man intervenes with cultivated mental impressions (material effluences from his subjective personal awareness) that let him express or suppress the impulse of his will, domesticating it so that it cannot become the kind of violent πάθος that could destroy his material integrity prematurely (see 4.2.3 above). This is the place for moral autonomy in Democritus: we cannot escape the reality that external and internal circumstances determine our will, pushing us toward automatic, unpremeditated decisions (acceptance, avoidance, indifference); but we can cultivate πόνοι whose result will be a subjective inner awareness that resists and limits the power of these impulses. We cannot cancel the current of material necessity (ἀνάγκη) as it carries us toward dissolution and death, but we can fight it<sup>185</sup> when it threatens to end us prematurely. We must die, but we can make our death calm, beautiful, and timely rather than the reverse.

The process of building subjective personal awareness (αἰδώς, φρόνησις, σοφία, σωφροσύνη, ὀξυδερκείη) through μάθησις is fundamentally a process of recognizing and passing judgment on pleasures—i.e. the διορισμός τῶν ἡδονῶν (4.2.3s). This brings us to the second and most important insight that emerges clearly in these fragments (u<sub>1</sub>-u<sub>11</sub>): not only do pleasure and pain (good and bad, life and death, τὰ μὲν καλὰ χρήματα ... τὰ δ' αἰσχροῦ) arise from the same material phenomena (u<sub>1</sub>), they coexist simultaneously in all material phenomena (u<sub>7</sub>, u<sub>8</sub>). We have already seen Democritus indicating this reality

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185 ἔχειν φυλακὴν (u<sub>11</sub>). Compare οὐκ ὀλίγας κῆρας ἐν τῷ βίῳ διώσεαι (4.2.3i), discussed in note 80.

clearly in fr. 33 and 646 Luria (4.2.3a-b), and we have discussed the atomist's strategy for confronting it, the strategy most clearly set forth in fr. 657 Luria (4.2.3i): *limit every emotional experience* (πάθος). Fr. 434, 734, and 797 Luria (u<sub>6</sub>-u<sub>8</sub>) clarify for us how the atomist imagines the generic process of imposing limits on πάθη varying in particular circumstances (as different people experience emotion at different times).

The first thing to recognize is that our subjective sensory experience is always larger than the limited material shapes that enable it (u<sub>6</sub>). As I eat an apple, for instance, I experience a range of different tastes, textures, odors, and thoughts. My singular πάθος (*this apple is sweet: I like it*) is really a series of continuous πάθη (*this apple is sweeter than a lemon, but more sour than the last apple I had; it is firm here, but soft there; it is ripe here, rotten there: I like it and dislike it*). The place for individual moral agency in Democritus arises in the recurrent opportunity that every πάθος offers for discontinuous perception (αἴσθησις). In brief, it is a matter of material necessity that I must have sensory experiences (*life gives me apples*). It is also a matter of material necessity that my experiences will be complex (*all apples taste good and bad*). But this does not make my particular experience at any moment inalterable. Instead, every particular experience becomes an opportunity for me to notice something new, something that will alter my moral will and its kinetic expression in my material shape (*what tastes do I notice while eating a particular apple? confronted with a barrage of conflicting sensory impressions, some pleasant and some not, which ones do I notice as significant? which fleeting ἡθῶν καὶ παθῶν ἐμφάσεις do I watch continually with my material understanding until they*

*become substantial* μνημαί?). This brings us to the διορισμός τῶν ἡδονῶν.

Like all food, apples are mortally dangerous to human shape: poison is a matter of dosage, not substance. Limiting my exposure to the danger inherent in eating apples is something I do naturally when I notice how they always taste both bad and good. If I only perceive how apples taste bad, then I simply avoid eating them, with the result that I destroy my material integrity—either by starving to death or by believing foolishly that I can find some other food that is not mortally dangerous. In either case, I become one of the ἀνοήμονες who run blindly from one death into the waiting arms of another (u<sub>7</sub>). On the other hand, if I only perceive how apples taste good, then I simply gorge myself on them as much as occasion permits, with the result that I am vulnerable to overdosing and destroying my material integrity. Fleeing death by undiscerning starvation, I embrace death by undiscerning gluttony: once again I find myself among Democritus' ἀνοήμονες (u<sub>7</sub>). The solution to this dilemma (*avoidance and indulgence lead to premature death*) is the insight that Clement finds Democritus expressing repeatedly: τέρψις γὰρ καὶ ἀτερπία οὗρος τῶν περιηκμακότων (u<sub>8</sub>). Modern students of early atomism have been too quick to emend Clement's text to agree neatly with Stobaeus,<sup>186</sup> whose quotation of the atomist makes pleasure and its lack a boundary separating what is beneficial from what is not. In fact, as extant in the MSS, Clement preserves a valuable window onto the consequential identity between benefit and deficit<sup>187</sup> in Democritean ethical thought. His version of the

186 ὅρος συμφορέων καὶ ἀσυμφορέων τέρψις καὶ ἀτερπία (3.1.46 = 4.2.2a<sub>1</sub> above).

187 Both can harm us (4.2.3i). Both can benefit us: φειδώ τοι καὶ λιμός χρηστή· ἐν καιρῷ δὲ καὶ δαπάνη (4.2.2b<sub>2</sub>). Happiness arises as we cultivate both such that we become content. This contentment is always subjective rather than objective: πένιη πλοῦτος ὀνόματα ἐνδείης καὶ κόρου· οὔτε οὖν πλούσιος <ὁ> ἐνδέων οὔτε πένιης ὁ μὴ ἐνδέων (fr. 652 Luria = Stob. 4.33.23). The wise and happy poverty that

saying that Democritus repeated often (and most likely with different words) recognizes that the boundary defined by pleasure and non-pleasure separates two kinds of the same death from each other. Pleasure and non-pleasure are not mutually exclusive in terms of outcome: too much of either amounts to dangerous excess.<sup>188</sup> The wise man notices both *τέρψις* and *ἀτερπία* in every situation, cutting every *πάθος* short whenever too much of either relative to the other shows him that his circumstances have moved past *ἀκμή* (i.e. become too rich or too poor, too full or too empty). He avoids gluttony (eating too many apples) and famine (eating too few) as he eats but remains fully aware that the ultimate outcome of his gustatory experience is always death. The subjective *ἀκμή* he seeks between pathological extremes can only delay this inevitability: it can never remove it.

According to Democritus, the fundamental mistake that foolish people make is to think that death can be avoided. Instead of facing the reality that human shape must disintegrate and die, they run from it (*u<sub>7</sub>*). Instead of noticing the mortal *πάθη* that are inescapable features of their material environment, permanent limits on human shape imposed by necessity, they cherish the naïve delusion that some of these *πάθη* are not really mortal. They neglect to develop a serviceable *φυλακή* (*u<sub>11</sub>*) against premature death because they are too busy desiring an impossible *ἀλκή* (*u<sub>1</sub>*) that will defeat death utterly (i.e. eliminate it from human experience). Imagining that their own emotional

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Democritus consistently recommends is thus available to all people, even those others might call *rich*. It exists not in particular things one has or lacks, but in the way one has or lacks them (i.e. the way one manages fundamentally subjective perceptions of *lack* and *satiety* in one's material situation).  
 188 μεγαλογκία (*u<sub>11</sub>*). τὰ δ' ἐλλείποντα καὶ ὑπερβάλλοντα μεταπίπτειν τε φιλεῖ καὶ μεγάλας κινήσιας ἐμποιεῖν τῇ ψυχῇ. αἱ δ' ἐκ μεγάλων διαστημάτων κινούμεναι τῶν ψυχέων οὔτε εὐσταθέες εἰσὶν οὔτε εὐθυμοί (4.2.3i).

experience might not be mortal, they do not put in the πόνος necessary to impose healthy subjective limits on its mortality. Instead they cherish (u<sub>12</sub>) unlimited fears (of eternal, unmixed ἀτερπία) and (u<sub>13</sub>) unlimited desires (for eternal, unmixed τέρψις)—fears and desires that increase their likelihood of suffering unnecessary harm (see 4.2.2-3):

TEXT ( <i>Luria</i> )	TRANSLATION ( <i>translator</i> )
(u <sub>12</sub> ) ἔνιοι θνητῆς φύσεως διάλυσιν οὐκ εἰδότες ἄνθρωποι, συνειδήσει δὲ τῆς ἐν τῷ βίῳ κακοπραγμοσύνης, τὸν τῆς βιοτῆς χρόνον ἐκ ταραχαῖς καὶ φόβοις τάλαιπωρέουσι, ψεύδεα περὶ τοῦ μετὰ τὴν τελευτὴν μυθοπλαστέοντες χρόνου.	Some people, ignorant of the dissolution of mortal nature, but conscious of their evil-doing in life, trouble their time of life with terrors and fears, inventing false tales about the time after death. ( <i>Taylor</i> )  Democritus, fr. B297 DK = fr. D149, D162 Taylor = fr. 583 Luria  Stob. 4.52.40 and 4.34.62; Apostol. 7.16c; Arsen. 23.47
(u <sub>13</sub> ) ὁ κατὰ φύσιν πλοῦτος ἄρτῳ καὶ ὕδατι καὶ τῇ τυχούσῃ τοῦ σώματος σκέπῃ συμπεπλήρωται· ὁ δὲ περισσὸς κατὰ ψυχὴν ἀπέραντον ἔχει κου τὴν τῆς ἐπιθυμίας βάσανον.	La ricchezza conforme a natura consiste nel pane, nell'acqua e nei vestiti per il corpo. Invece, la ricchezza superflua è legata al desiderio smisurato che è proprio dell'anima. ( <i>Krivushina, Luria</i> )  Democritus, fr. 750a Luria = fr. 64 Gerlach <sup>189</sup>  Ant. Melissa 1.31.62 ( <i>PG</i> 136:884c); <i>Cod. Paris.</i> 1169, f. 84r; <i>AED</i> 81; <i>CP</i> 749 Elt

The cure for dangerous πάθη lies continually available in the subjective capacity each individual human being has to recognize the death<sup>190</sup> that draws near to him always, in

189 Gerlach marks the attribution of this fragment as uncertain, but the only explicit attribution in the MSS is to the atomist, and its language and message agree neatly with other fragments whose position in the Democritean corpus is secure, e.g. fr. 631 Luria (= 4.2.3p), 645 Luria (= 4.2.3g), 657 Luria (= 4.2.3i), 732 Luria (= 4.2.3o), and 750 Luria (= 4.2.3f). I accept it as genuine.

190 διάλυσιν (u<sub>13</sub>), κῆρες καὶ ἀμηχανία (4.2.3a), κίνδυνος (4.2.3b), νοσήματα καὶ πάθη ... ἡ κακία

every material environment where his mortal shape exists. Notice the necessary reality that death approaches you always, Democritus says, and you will know how to endure and even enjoy its onslaught with minimal discomfort and confusion. Ceasing to imagine impossible lives in which you suffer pleasure and non-pleasure unlimited by death, you will at last perceive life as it really exists, with limited pleasure and non-pleasure. No matter what your personal environment may contain (particulars are unpredictable and irrelevant<sup>191</sup>), it will lose the power to torment you with infinite fear and desire when you see clearly the worst and the best it can ever deliver. Your ψυχή will become ἄτακτος, εὐσταθής, and εὐθυμος—maximally immune to whatever insults unpredictable particular material circumstances may offer before they destroy it utterly. This is what Democritus means when he says good and bad come to mankind from the same things:<sup>192</sup> necessity offers death to the wise man and the fool in every vicissitude; the wise man develops the sharp-sightedness<sup>193</sup> to enjoy dying (eating his poisonous apple and savoring every bite) while the fool hopes against necessity that he is not really dying, that avoiding mortality once means he can avoid it forever<sup>194</sup> (he eats poisonous food without real enjoyment because he keeps trying to convince himself that it is not really poisonous). The same

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πολύχυτος καὶ δαψιλῆς οὖσα τοῖς πάθεσιν (4.2.3c), κήρες ... φθόνος καὶ ζήλος καὶ δυσμενίη (4.2.3i).  
 191 The fundamental intractability of the particular appears clear in both the ethical fragments (e.g. 4.2.1d, 4.2.3e-h in this chapter) and the physical (e.g. t<sub>4</sub>-t<sub>5</sub>, u<sub>6</sub> in this section).

192 ἀνθρώποισι κακὰ ἐξ ἀγαθῶν φύεται (u<sub>1</sub>). ἀφ' ὧν ἡμῖν τὰγαθὰ γίγνεται, ἀπὸ τῶν αὐτῶν τούτων καὶ τὰ κακὰ ἐπαυρισκοίμεθ' ἅν, τῶν τε κακῶν ἐκτὸς εἴημεν (4.2.3b).

193 ὀξυδερκεΐη, αἰδώς, φρόνησις, σοφίη, σωφροσύνη. See page 388 above.

194 This persistent perceptual error on the part of the fool means that success is bad for him, since whenever he sees any material process going well it leads him to suppose that there exists such a thing as success without failure, pleasure without non-pleasure, life without death. Naively wishing to save himself from death rather than pass through it (as we all must), he runs the risk of turning good things to bad effect: τοῖς τε ἀγαθοῖσιν οἷόν τε χρῆσθαι καὶ πρὸς τὰ κακὰ, εἴ τιτι βουλομένῳ ἀλκήν (u<sub>1</sub>).

generic material circumstances that make the wise man die happy and content make the fool die miserable and troubled. Where the wise man sees death as an end to all fears, the fool sees it as a gateway to unbounded fear ( $u_{12}$ ). Where the wise man sees that death is an end to all pleasure and so becomes content to dally with small delights (the poor but sufficient joys that come from satisfying basic bodily requirements<sup>195</sup>), the fool imagines that pleasure might be infinite and so becomes malcontent with safe ἡδοναί.<sup>196</sup>

### **Integrating Individual and Community (4.2.5)**

Democritus imagines humanity as a generically regular material shape whose particular instance invariably finds itself constrained by mortal limits. These limits are generically regular, existing in every human shape as persistent needs for certain material experiences—e.g. the experiences we refer to generically as nourishment,<sup>197</sup> protection,<sup>198</sup> and procreation.<sup>199</sup> In pursuit of necessary material experiences like these, we encounter another generically regular experience known as happiness. According to the atomist, this experience arises and persists most often in the particular instances of humanity that perceive their mortal limitations in every circumstance, recognizing death as something generically inevitable and enjoying each particular instance of survival without expecting

195 This is the happy poverty recommended in testimonia like  $u_{13}$  (ὁ κατὰ φύσιν πλοῦτος),  $u_{11}$  (εὐογκία), 4.2.3o (αὐτάρκεια), 4.2.3f (ὦν τὸ σκῆνος χρήζει), and 4.2.2b<sub>2</sub> (φειδῶ τοι καὶ λιμὸς). See note 125 on page 365 above.

196 ἀνοήμονες τῶν ἀπεόντων ὀρέγονται, τὰ δὲ παρεόντα καὶ παρωιχημένων κερδαλεώτερα ἔοντα ἀμαλδύνουσιν (4.2.2b<sub>3</sub>). ἡ τοῦ πλέονος ἐπιθυμία τὸ παρεὸν ἀπόλλυσι τῇ Αἰσωπείῃ κυνὶ ἱκέλη γινομένη (4.2.3g). ἐπὶ τοῖς δυνατοῖς οὖν δεῖ ἔχειν τὴν γνώμην καὶ τοῖς παρικοῖς ἀρκέσθαι ... ὅπως ἂν τὰ παρεόντα σοὶ καὶ ὑπάρχοντα μεγάλα καὶ ζηλωτὰ φαίνηται, καὶ μηκέτι πλείονων ἐπιθυμούντι συμβαίνει κακοπαθεῖν τῇ ψυχῇ (4.2.3i). πάντων κάκιστον ἡ εὐπετεία παιδεῦσαι τὴν νεότητα· αὕτη γὰρ ἔστιν ἡ τίκει τὰς ἡδονὰς ταύτας, ἐξ ὧν ἡ κακότης γίνεται ( $u_4$ ).

197 See e.g. fr. 732 Luria (4.2.3o) and 750a Luria (4.2.4u<sub>13</sub>).

198 See e.g. fr. 620-621, 745 Luria (4.2.3n).

199 See e.g. fr. 562 Luria (3.2.2 [4] a<sub>2</sub>).

it (or wanting more of it than is possible for an inherently mortal thing). At this point in our discussion, it is helpful to notice that Democritus regards community as one of the essential limitations on human shape (something analogous to nourishment, protection, and procreation). Existing as individuals, we invariably require other humans:

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
(v <sub>1</sub> ) ἀπορίη ξυνή τῆς ἐκάστου χαλεπωτέρη· οὐ γὰρ ὑπολείπεται ἐλπίς ἐπικουρίας. ( <i>Luria</i> )	Helplessness on the part of all is worse than individual helplessness; for there is left no hope of assistance. ( <i>Taylor</i> )  Democritus, fr. B287 DK = fr. D152 Taylor = fr. 647 Luria  Stob. 4.40.20
(v <sub>2</sub> ) τὰ κατὰ τὴν πόλιν χρεῶν τῶν λοιπῶν μέγιστα ἡγεῖσθαι, ὅκως αὖξεται <sup>200</sup> εὖ, μήτε φιλονικέοντα παρὰ τὸ ἐπαικὲς μήτε ἰσχὺν ἑαυτῶι περιτιθέμενον παρὰ τὸ χρηστὸν τὸ τοῦ ξυνοῦ. πόλις γὰρ εὖ ἀγομένη μεγίστη ὀρθωσίς ἐστι, καὶ ἐν τούτῳ πάντα ἔνι, καὶ τούτου σωιζομένου πάντα σώζεται καὶ τούτου διαφθειρομένου τὰ πάντα διαφθίρεται. ( <i>DK, corrected</i> )	In order that it may prosper, one should consider the affairs of the city as more important than other things, refraining from partisan rivalry beyond what is fitting and taking no strength to oneself beyond what is useful to the common weal. For a city well run is the greatest prosperity possible. All things exist in it such that when it is saved they are all saved, and when it is destroyed they all perish. ( <i>my translation</i> )  Democritus, fr. B252 DK = fr. D116 Taylor = fr. 595 Luria  Stob. 4.1.43

200 Emending this verb to ἄξεται (DK, Taylor, Luria) to agree precisely with the following sentence (πόλις γὰρ εὖ ἀγομένη) is unnecessary. I prefer the reading of the MSS, which resonates with Democritus' documented habit of illustrating the mutant existence of compound shapes in the human environment with metaphors drawn from biological *growth* (LSJ s.v. αὖξάνω II) as it occurs in animals and plants: ἀνθρώποισι κακὰ ἐξ ἀγαθῶν φύεται (4.2.4u<sub>1</sub>); οὕτω μεγάλης τε τῆς φυτικής ἐστί (4.2.4u<sub>2</sub>). Several testimonia are also worth noting here (as containing what may be echoes or even quotations of original Democritean diction): ὡς ἱκανὸν ὄντα μάρτυν ἅμα τῶν καλῶν καὶ θεατὴν δείκνυσι τὸν λόγον ἐντὸς ἥδη τρεφόμενον καὶ ῥιζούμενον ἐν ἑαυτῶι (4.2.4u<sub>10</sub>); λέγει δὲ ὁμοίως Λευκίππῳ ... εἶναι δὲ τῶν



Speaking generically (as Democritus does), the individual does not exist without society. Without communal habits for securing human nourishment, protection, and procreation, the individual cannot have these things for himself (and develop his own private habits for enjoying them). The destruction of all public life (generically speaking) is necessarily the destruction of private life ( $v_1, v_2$ ).<sup>201</sup> What then is the relationship between the private νόμοι that undergird subjective individual awareness (4.2.3-4) and the public νόμοι that give collective human shape coherence (as societies rear children together, identify and kill mutual enemies, and communicate through language)? How does the happy poverty of Democritus exist in the city of Abdera?

We have already seen that the habits of the individual man inevitably derive from his unique perception of the material environment that surrounds him, an environment that includes the habits of other individuals he can observe.<sup>202</sup> But the atomist offers more insight than this:

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κόσμων ἄνισα τὰ διαστήματα καὶ τῇ μὲν πλείους, τῇ δὲ ἐλάττους καὶ τοὺς μὲν αὖξεσθαι, τοὺς δὲ ἀκμάζειν, τοὺς δὲ φθίνειν, καὶ τῇ μὲν γίνεσθαι, τῇ δὲ ἐκλείπειν (fr. 349 Luria = Hippol. *Refut.* 1.13); μικρὰν ἐπιληψίαν τὴν συνουσίαν ὁ Ἀβδηρίτης ἔλεγεν σοφίστης, νόσον ἀνίατον ἡγούμενος ... ἄνθρωπος γὰρ ἐξ ἀνθρώπου ἐκφύεται τε καὶ ἀποσπᾶται (fr. 527 Luria = Clem. *Paed.* 1.94); τὴν μὲν περὶ τῶν ἀποθανεῖν δοξάντων ἔπειτα ἀναβιούντων ἱστορίαν ἄλλοι τε πολλοὶ τῶν παλαιῶν ἠθροισαν καὶ Δημόκριτος ὁ φύσις ἐν τοῖς Περὶ τοῦ Ἀίδου γράμμασιν ... οὐδὲ γὰρ ὁ θάνατος ἦν ἀπόσβεσις, ὥς ἔοικεν, τῆς συμπάσης ζωῆς τοῦ σώματος, ἀλλ' ὑπὸ μὲν πληγῆς τινος ἴσως καὶ τραύματος παρεῖτο, τῆς δὲ ψυχῆς οἱ περὶ τὸν μυελὸν ἔμενον ἔτι δεσμοὶ κατερριζωμένοι καὶ ἡ καρδία τὸ ἐμπύρευμα τῆς ζωῆς εἶχεν ἐγκείμενον τῷ βάθει (fr. 585 Luria = Procl. *in Plat. Remp.* 2.113).

201 There is no individual human being whose life never depends on community at all.

202 See chapter 3 and the discussion of fr. 657 Luria in 4.2.3 above.

TEXT ( <i>editor</i> )	TRANSLATION ( <i>translator</i> )
(v <sub>3</sub> ) τοῖς χρηστοῖσιν οὐ συμφέρον ἀμελέ- οντας τῶν ἑωυτῶν ἄλλα πρήσσειν· τὰ γὰρ ἴδια κακῶς ἔσχεν. εἰ δὲ ἀμελέοι τις τῶν δημοσίων, κακῶς ἀκούειν γίγνεται, καὶ ἦν μηδὲν μήτε κλέπτει μήτε ἀδικεῖ. ἐπεὶ καὶ <μη> <sup>203</sup> ἀμελέοντι ἢ ἀδικέοντι κίνδυνος κακῶς ἀκούειν καὶ δὴ καὶ παθεῖν τι ἀνάγκη δὲ ἀμαρτάνειν, συγγινώσκεσθαι δὲ τοὺς ἀνθρώπους οὐκ εὐπετές. ( <i>Luria</i> )	It is not advantageous for good men to do other things while neglecting their own affairs; for then their own affairs go badly. But if someone neglects communal affairs, he acquires a bad reputation, even if he does not steal or do any wrong. For even if one does not neglect those things or do wrong, one runs a risk of being slandered or harmed. One is bound to go wrong, and people are not inclined to make allowances. ( <i>Taylor</i> )  Democritus, fr. B253 DK = fr. D117 Taylor = fr. 612 Luria  Stob. 4.1.44
(v <sub>4</sub> ) οὐκ ἂν ἐκώλυον οἱ νόμοι ζῆν ἕκαστον κατ' ἰδίην ἐξουσίην, εἰ μὴ ἕτερος ἕτερον ἐλυμαίνετο· φθόνος γὰρ στάσιος ἀρχὴν ἀπεργάζεται. ( <i>Luria</i> )	The laws would not prevent each person from living in accordance with his own private ability, if one did not harm another; it is envy which prompts the beginning of civil strife. ( <i>Taylor, corrected</i> )  Democritus, fr. B245 DK = fr. D109 Taylor = fr. 570 Luria  Stob. 3.38.53; Maxim. <i>L. c.</i> 54.658; Ant. Melissa 1.62.109 ( <i>PG</i> 91:961a, 136:969a)

203 I suspect this emendation (proposed by Meineke and accepted by DK, Wachsmuth, Luria, and Taylor) to be unnecessary, though I have left it in the text because it does not significantly change the meaning of the fragment, on my reading. Omitting it, Democritus' sentence in the MSS could be translated thus: "Whether one does nothing or does wrong, one runs the risk of acquiring a bad reputation or suffering some repercussion." In light of the next sentence, Democritus would still appear to suggest that there is no such thing as justice that is not unjust from someone's subjective perspective.

<p>(v<sub>5</sub>) οἷσιν ἡδονὴν ἔχουσιν αἱ τῶν πέλας  ξυμφοραί, οὐ ξυνιᾶσι μὲν ὥς τὰ τῆς τύχης  κοινὰ πᾶσιν, ἀπορέουσι δὲ οἰκίης χαρᾶς.  (Luria)</p>	<p>Those who take pleasure in their neighbors'  misfortunes do not realize that fortune is  common to all, and are incapable of finding  their own enjoyment. (Taylor)</p> <p>Democritus, fr. B293 DK  = fr. D158 Taylor  = fr. 678 Luria</p> <p>Stob. 4.48.10</p>
<p>(v<sub>6</sub>) κρείσσων ἐπ' ἀρετὴν φανεῖται  προτροπῇ χρώμενος καὶ λόγου πειθοῖ  ἥπερ νόμῳ καὶ ἀνάγκῃ. λάθρῃ μὲν γὰρ  ἀμαρτέειν εἰκὸς τὸν εἰργμένον ἀδικίης ὑπὸ  νόμου, τὸν δὲ ἐς τὸ δέον ἡγμένον πειθοῖ  οὐκ εἰκὸς οὔτε λάθρῃ οὔτε φανερώς  ἔρδειν τι πλημμελές. διόπερ συνέσει τε καὶ  ἐπιστήμῃ ὀρθοπραγέων τις ἀνδρεῖος ἅμα  καὶ εὐθύγνωμος γίγνεται. (Luria)</p>	<p>Appare più opportuno esortare alla virtù  servendosi di ragionamenti persuasivi piut-  tosto che di costrizioni legali. È verosimile,  infatti, che si lasci andare a compiere ingiu-  stizia di nascosto chi è sottomesso solo all  legge, mentre non è verosimile che compia  azioni che violino i propri doveri né di  nascosto né in pubblico chi sia stato  persuaso dai propri ragionamenti ad agire  bene. Pertanto, chi agisce rettamente grazie  al proprio giudizio e alla propria cono-  scenza diviene, simultaneamente, virtuoso  e coraggioso. (Luria, Krivushina)</p> <p>Democritus, fr. B181 DK  = fr. D46 Taylor  = fr. 607 Luria</p> <p>Stob. 2.31.59</p>
<p>(v<sub>7</sub>) ὁ νόμος βούλεται μὲν εὐεργετεῖν βίον  ἀνθρώπων· δύναται δέ, ὅταν αὐτοῖ  βούλωνται πάσχειν εὖ· τοῖσι γὰρ πειθο-  μένοισι τὴν ἰδίην ἀρετὴν ἐνδείκνυται.  (Luria)</p>	<p>Law desires to bless the life of men, and it  is able to do this, whenever people are  willing to receive its benefits.<sup>204</sup> To those  who yield to its persuasion it reveals their  own unique moral excellence.  (my translation)</p> <p>Democritus, fr. B248 DK  = fr. D112 Taylor  = fr. 608 Luria</p> <p>Stob. 4.1.33</p>

<p>(v<sub>8</sub>) ὁ μὲν εὖθυμος εἰς ἔργα ἐπιφερόμενος δίκαια καὶ νόμιμα καὶ ὕπαρ καὶ ὄναρ χαίρει τε καὶ ἔρρωται καὶ ἀνακήδης ἐστίν· ὃς δ' ἂν καὶ δίκης ἀλογῇ καὶ τὰ χρὴ ἐόντα μὴ ἔρδῃ, τούτῳ πάντα τὰ τοιαῦτα ἀτερπεῖν<sup>205</sup> ὅταν τευ ἀναμνησθῇ, καὶ δέδοικε καὶ ἑωυτὸν κακίζει. (DK, corrected)</p>	<p>Being carried along<sup>206</sup> toward deeds just and lawful both night and day, the happy man rejoices, enjoys good health, and exists free from anxiety. But for the man who takes no account of justice and does not do what must be done, all such things [i.e. things like happiness, health, and lack of worry] are unpleasantness: whenever he calls anything to mind, he is fearful and reproaches himself. (<i>my translation</i>)</p> <p>Democritus, fr. B174 DK = fr. D39 Taylor = fr. 740 Luria</p> <p>Stob. 2.9.3</p>
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In order to interpret these fragments properly, it is necessary to notice that Democritus consistently uses the word νόμος to indicate a habit that is conscious—e.g. referring to a certain color explicitly with a certain word<sup>207</sup> or establishing a deliberate personal habit of feeling αἰδώς without an external community to enforce it.<sup>208</sup> When he wants to speak of unpremeditated habits, habits that arise from animal nature over time with no deliberate or explicit purpose, he uses words like κατάστασις τις ἀρχαίη and νομίζον (fr. 562 Luria).<sup>209</sup> The νόμοι in these fragments (v<sub>4</sub>, v<sub>6</sub>, v<sub>7</sub>) are deliberate habits—calculated behaviors that people adhere to purposely. They exist as mature fruits of historical

204 See LSJ, s.v. πάσχω IIIb.

205 DK has the superior text overall (avoiding unnecessary emendation of the admittedly difficult text in the MSS), but Wachsmuth's punctuation here is better.

206 See LSJ, s.v. ἐπιφέρω III.

207 νόμῳι χροίη (4.2.31).

208 τοῦτον νόμον τῇ ψυχῇι καθεστάναι (4.2.4u<sub>5</sub>).

209 The unpremeditated nature of procreation as a human habit is confirmed when the atomist refers to it as a sort of madness, a less virulent manifestation of the psychosomatic derangement known as epilepsy: μικρὰν ἐπιληψίαν τὴν συνουσίαν ὁ Ἀβδηρίτης ἔλεγεν (fr. 527 Luria = Clem. *Paed.* 1.94).

human civilization rather than immature behavioral tendencies latent in humanity's animal nature. Note that the latter (unpremeditated animal tendencies) are always ripening into the former (deliberate human habit): the history of human civilization told by Democritus is one of νομίζοντα turning into νόμοι as humanity shapes its animal nature deliberately over time.<sup>210</sup> Now for our interpretation of these fragments.

Given that community is essential to human survival ( $v_1, v_2$ ), it comes as no surprise that individuals who neglect public affairs (τὰ δημόσια) acquire a bad reputation ( $v_3$ ). Given the importance Democritus gives to subjective individual awareness (as an instrument for cultivating the least destructive modes of life available to human shape), it is similarly unsurprising that he sees private affairs (τὰ ἴδια) as vitally important ( $v_3$ ). How is the individual to have subjective personal awareness if he refuses to notice or respond to the unique circumstances that affect him and shape his moral character? This means that Democritus' moral hero<sup>211</sup> must participate in both public and private life: each sphere of activity contributes something vital to his mortal existence (and the mortal existence of other people around him).<sup>212</sup> As he decides how to participate in each, what public and private habits (νόμοι) to cultivate and how to apply them, he inevitably makes mistakes, doing things that hurt himself and others. Democritus presents this harm as something necessary, one of the inevitable diseases infecting human life.<sup>213</sup> Since it

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210 See chapter 3. Note that the development of formal νόμοι in a society does not ever remove νομίζοντα: unpremeditated moral behavior is a permanent feature of human behavior, a permanent source of the kind of material movement that is constantly altering the shape of humanity.

211 οἱ χρηστοί ( $v_3$ ). [ὁ] κρείσσων ἐπ' ἀρετὴν ( $v_6$ ). ὁ εὖθυμος ( $v_8$ ).

212 Note that Democritus differs here from Epicurus and his followers, who renounce public life as something inherently and irredeemably evil (more poisonous than profitable in every instance).

213 ἀνάγκη δὲ ἀμαρτάνειν ( $v_3$ ). See 4.2.3a-c above.

cannot be avoided, how is it to be borne?<sup>214</sup> Our fragments (v<sub>4</sub>-v<sub>8</sub>) provide an answer, illustrating how Democritus imagines the individual developing useful personal habits (repetitive expressions of his unique subjective awareness) through interaction with the communal habits (shared law and custom) that give shape to the society he inhabits.

The first thing to recognize is that communal and individual habits, like other things in the Democritean διάκοσμος, are uncertain (unpredictable in terms of historical existence and outcome) in the particular.<sup>215</sup> Even if νόμος exists as a generically good thing, its particular instance will always produce more harm than healing in some circumstances. The moral hero's duty is to notice the material circumstances in which a νόμος appears good generically (as these circumstances recur in human experience, individual and collective) and to choose it there rather than where it proves generically evil.<sup>216</sup> While this approach does not remove the possibility of νόμος causing harm in particular circumstances, it does make that harm less likely and provides resources for alleviating it. Judging from (v<sub>4</sub>), Democritus perceives communal νόμος (i.e. public law or custom) to exist as a generically good thing when it restrains material expressions of human envy that lead directly to civil strife. The moral hero will perceive this generic

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214 Remember here the strategy that Democritus offers for driving back (διωθέω) φθόνος, ζήλος, and δυσμενίη in 4.2.3i. What is the atomist's strategy for managing the harm that occurs as people attend or fail to attend to public and private business? What can we do to render the mistakes that we must make (v<sub>3</sub>) as harmless as possible to ourselves and other people?

215 ἐτεῖν μὲν νυν ὅτι οἶον ἕκαστον ἔστιν <ἧ> οὐκ ἔστιν οὐ συνέμεν, πολλαχῇ δεδήλωται (4.2.4t<sub>4</sub>). For an ethical formulation of this constant in the Democritean worldview, see fr. 33b Luria: τόλμα πρήξιος ἀρχή, τύχη δὲ τέλος κυρίη (Stob. 4.10.28).

216 ἀνθρώποισι κακὰ ἐξ ἀγαθῶν φύεται, ἐπὶν τις τὰγαθὰ μὴ 'πιστῆται ποδηγετεῖν μηδὲ ὀχεῖν εὐπόρως, οὐ δίκαιον ἐν κακοῖσι τὰ τοιάδε κρίνειν, ἀλλ' ἐν ἀγαθοῖσιν ὧν (4.2.4u<sub>1</sub>). The habit of building fires in the fireplace is good as long as the chimney is not leaking. The moral hero notices this and refuses to build fires in fireplaces with leaky chimneys. This does not mean that no fire he lights will ever harm him.

utility (evident in multiple particular instances in human experience) and will embrace public law and/or custom where it prohibits people from committing outrages whose likely result is civil war. Judging from (v<sub>6</sub>), the utility of communal νόμος as a negative instrument preventing civil strife does not make it the best available instrument for inciting people positively to just behavior. Recognizing this, the atomist's moral hero will not invoke law as a positive incitement to moral excellence or justice: instead he will use rhetorical argument and persuasion,<sup>217</sup> appealing to the private morality (individual νόμοι) of the person he wishes to influence rather than to public morality (public νόμοι). Concrete illustration reveals the distinction the atomist sees here. Communal law is very useful to me when I see you about to strike a fellow citizen dead because you disagree with his political views: I incapacitate you and invoke the public law that forbids civil strife to justify my intervention. It becomes less useful to me when your hostility is less acutely virulent. When I find you insulting another citizen verbally for his bad politics, the proper course of action is not to incapacitate you and invoke the law against civil strife (as previously), but to reason with you and attempt to help you construct private habits of civil discourse that will make the disagreement between you and our mutual neighbor as peaceful as possible, preventing or at least postponing the need to resort to lawful violence—which always threatens the integrity of human shape at least as much as it protects it: Democritus' moral hero would always prefer to avoid applying dangerous

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217 λάθρηι μὲν γὰρ ἀμαρτέειν εἰκὸς τὸν εἰργμένον ἀδικίης ὑπὸ νόμου, τὸν δὲ ἐξ τὸ δέον ἡγμένον πειθοῖ οὐκ εἰκὸς οὔτε λάθρηι οὔτε φανερώς ἔρδειν τι πλημμελές (v<sub>6</sub>). Notice that the likelihood (εἰκός) here is the same that we find driving Democritean *Kulturgeschichte* historically in chapter 3.

remedies where they are not absolutely necessary.<sup>218</sup>

So far this discussion corroborates everything we have already learned about Democritus' view of human culture. Like all material expressions of human shape, νόμος is plastic and ambivalent—a mutable tool that mutant human nature creates and recreates constantly in different forms to serve changing material circumstances. As there exists no single tool that lasts forever and is good for all situations, so there exists no single νόμος that will serve all men equally well in every circumstance—no public law that can settle all disputes justly for all time, and no private habit that can resolve every moral dilemma. But the intent of νόμος is always to be useful: it is crafted to make human life better.<sup>219</sup> Democritus expresses this observation as a truism that needs no qualifications, implying that even bad νόμοι carry some latent good in their intention. Are the laws of a corrupt state in any sense good? What about the habits of a corrupt man? Democritus suggests that they may be, if we use them properly. No matter what it is (public law or private custom), νόμος becomes useful to us when our adherence to it is intentional<sup>220</sup>—when we keep it as people consciously persuaded (πειθόμενοι) of its utility. Then it shows us our

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218 τοῖς τε ἀγαθοῖσιν οἷόν τε χρῆσθαι καὶ πρὸς τὰ κακά, εἴ τιτι βουλομένῳ ἀλκὴν (4.2.4u). ἀφ' ὧν ἡμῖν τὰγαθὰ γίγνεται, ἀπὸ τῶν αὐτῶν τούτων καὶ τὰ κακά ἐπαυρισκοίμεθ' ἅν, τῶν τε κακῶν ἐκτὸς εἶημεν (4.2.3b). From Democritus' perspective, justice is what occurs when actors perceive what is necessary in particular circumstances and do only that, refusing to be turned aside: δίκη μὲν ἔστιν ἔρδειν τὰ χρῆ ἔόντα, ἀδικίη δὲ μὴ ἔρδειν τὰ χρῆ ἔόντα, ἀλλὰ παρατρέπεσθαι (fr. 601 Luria = Stob. 4.2.14). In other words, the nature of justice depends on the subjective personal awareness of those applying it: if they lack the ability to see or carry out what is necessary in certain circumstances, then their justice will be unjust in those circumstances (more harmful than helpful). What turns people aside as they assess what must be done in any situation and do it? Powerful emotions do (see 4.2.3 *supra*). Thus, like happiness, justice exists most effectively in situations where actors have limited their emotions: δίκης κῦδος γνῶμης θάρσος καὶ ἀθαμβία, ἀδικίης δὲ δέϊμα ξυμφορῆς τέρμα (fr. 601 Luria = Stob. 3.7.31).

219 ὁ νόμος βούλεται μὲν εὐεργετεῖν βίον ἀνθρώπων (v<sub>7</sub>).

220 ὅταν αὐτοὶ βούλωνται πάσχειν εὖ (v<sub>7</sub>).



unique moral excellence.<sup>221</sup> What does this mean? A concrete *exemplum* illustrates my interpretation of Democritus' meaning, an interpretation consistent with everything else we have observed thus far in this study.

Suppose I move to a foreign country whose laws and customs differ significantly from my own. Naturally, some of these laws and customs will make sense to me; I will understand their utility. Others will not; I will see them and react with surprise or even disgust. Democritus would not advise me to suppress my negative reactions completely in every circumstance,<sup>222</sup> but he would recommend that the best way to exist in my new environment would not be to make a point of deliberately flouting its laws and customs where they do not suit mine. Rather than attack strange laws (in a state) or strange habits (in some other person), I should be willing to see how these laws and habits persist as means toward some end that appears advantageous (to human shape that is not my own, individuals and collectives whose integrity resembles mine without being identical to it). In seeing and acknowledging foreign goods, I become aware (as perhaps I might not otherwise) of my own good, an ἰδίη ἀρετή that my subjective awareness can perceive and cultivate deliberately, preferably without disrupting the lives of the other people around me. Interested in maintaining the integrity of the community around me, even when it is not a morally perfect community (as none is ever going to be<sup>223</sup>), I should not deliberately construct my personal habits as an attack on the habits of my fellow citizens or the public

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221 τοῖσι γὰρ πειθομένοισι τὴν ἰδίην ἀρετὴν ἐνδείκνυται (v<sub>7</sub>).

222 See 4.2.4u<sub>5</sub> and the discussion on pages 388-393 above. Self-respect demands that I avoid doing some things regardless of what people around me may think (or do in response to my self-motivated action).

223 Remember that humanity is necessarily diseased (imperfect, mortal): see 4.2.3a-c above.

law of our shared society.<sup>224</sup> Rather than fight others' law or custom as an evil imposition on my subjective awareness (and the unique habits this awareness creates as I recognize and attempt to secure my own happiness), I should do all in my power to make external νόμοι my allies, building my internal, personal νόμοι skillfully and deliberately such that they do not bring me into unnecessary conflict with those around me. If some external law or custom requires that I avoid partaking of a certain beverage or carrying a certain weapon in public, for example, then I cheerfully and willingly renounce these things and find subjective happiness elsewhere (rather than insist on doing what others do not want me to do, making my happiness appear obnoxious to the community I inhabit).

As I pursue this concessive method of crafting the deliberate habits that enable me to survive and thrive in a community of foreigners, my situation improves: perceiving me as no threat, my community allows me to pursue my own happiness with greater freedom than they would if I made a point of opposing them. Unlike the recklessly disobedient, who experience fear and self-reproach every time they notice their own good fortune,<sup>225</sup> wondering if it is about to turn bad as they remember the laws broken to acquire it, I feel confident and secure in whatever happiness I may find, knowing that I have taken explicit measures to prevent it from threatening or appearing to threaten the material integrity of the people around me. The same generic material circumstances that cause the recklessly

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224 Taking pleasure in my neighbor's displeasure, I inadvertently make my own displeasure pleasant for him. When particular circumstances turn against me unpredictably, as they always will (τὰ τῆς τύχης κοινὰ πᾶσιν), he will remember my lack of courtesy and be more likely to respond in kind, enjoying my pain rather than trying to alleviate it. Thus do people without understanding undermine their own χαρά needlessly (v<sub>5</sub>). For more about the idea of moral reciprocity as it appears in Democritus, who construes shared morality as something that arises from people likening the observed experiences of others to themselves, see chapter 3.2.2 (4ii) above.

225 ὅταν τευ ἀναμνησθῇ, καὶ δέδοικε καὶ ἑωυτὸν κακίζει (v<sub>8</sub>).

disobedient to fear and reproach themselves cause me to experience joy, good health, and freedom from anxiety.<sup>226</sup>

The strategy for pursuing happiness evident here ( $v_7$ ,  $v_8$ ) is the same μηχανή we have already seen Democritus advocating elsewhere (most notably in 4.2.3i). Surrounded constantly by material events that exert significant determinative pressure on its moral expression, the individual human shape should deliberately insulate itself from disturbing emotions—the kind that arise regularly from jealous rivalry<sup>227</sup> or callous disregard for the way other people practice justice and propriety.<sup>228</sup> Free to develop our own happiness, we should deliberately make it a limited happiness (poor by the standards of unwise people whose appetite for more is as insatiable as their fear of loss is unlimited). Free to develop our own habits (νόμοι) for pursuing this happiness, we should deliberately make these as unthreatening to other people as possible (since we require cooperation from other people as we pursue and enjoy our own happiness: they must at least agree to leave us alone). Always we must seek to remove ourselves from suffering too much under the influence of external material circumstances (including other people), an influence that we must have (happiness is unattainable in isolation from the material universe) but cannot afford to receive carelessly. As with envy, so with law: we suffer each best as we consciously limit its ability to disturb our psychic tranquility. This is true regardless of particulars—

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226 ὁ μὲν εὖθυμος ... χαίρει τε καὶ ἔρρωται καὶ ἀνακῆδης ἐστίν· ὃς δ' ἂν καὶ δίκης ἀλογῇ καὶ τὰ χρηρ' ἐόντα μὴ ἔρδῃ, τούτῳ πάντα τὰ τοιαῦτα ἀτερπεῖη ( $v_8$ ).

227 φθόνος ( $v_4$ ). φθόνος, ζῆλος, δυσμενία (4.2.3i).

228 ὃς δ' ἂν καὶ δίκης ἀλογῇ καὶ τὰ χρηρ' ἐόντα μὴ ἔρδῃ, τούτῳ πάντα ... ἀτερπεῖη ( $v_8$ ). ὁ γὰρ θαυμάζων τοὺς ἔχοντας καὶ μακαριζομένους ὑπὸ τῶν ἄλλων ἀνθρώπων καὶ τῇ μνήμῃ πᾶσαν ὥραν προσεδρεύων ἀεὶ ἐπικαινουργεῖν ἀναγκάζεται καὶ ἐπιβάλλεσθαι δι' ἐπιθυμίην τοῦ τι πρήσσειν ἀνήκεστον ὧν νόμοι κωλύουσιν (4.2.3i).

i.e. the individual societies or people whose moral habits prove more or less reconcilable to our own. My happiness will not be the same in a tyranny as in a democracy,<sup>229</sup> but it will always be greater (safer) as I avoid useless confrontation with others where our respective νόμοι become incompatible. The peaceful reconciliation of persuasion appears preferable, generally speaking, to the violent discipline of law that requires enforcement (v<sub>6</sub>). We should invoke the latter only when it is absolutely necessary—to save the material integrity of the community on which all human happiness (our own included) necessarily depends (v<sub>2</sub>).

### **Conclusion: Understanding the Democritean ΔΙΑΚΟΣΜΟΣ (4.3)**

The first chapter of this study shows that authors working in the Critical Tradition consistently create world-systems (διάκοσμοι) in which human ethics exist as conditioned expressions of some larger material order that underlies and determines all phenomena accessible to human perception and experience—e.g. the cosmic justice and retribution imagined by Anaximander, Heraclitus' war, Empedocles' love and strife, the mind of Anaxagoras, or the harmony of Philolaus. In light of this chapter and the two preceding it, the atomist διάκοσμος of Democritus definitely appears to exist in this Tradition. In the world-system imagined by Democritus, the larger material order in which human ethics arise and exist is necessity (ἀνάγκη). Democritean physics illustrate what this necessity is: an eternal confluence and divergence of matter and empty space that is

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<sup>229</sup> Democritus explicitly prefers poverty in a democracy to happiness in a despotic regime: ἡ ἐν δημοκρατίῃ πενία τῆς παρὰ τοῖς δυνάσταισι καλεομένης εὐδαιμονίας τοσοῦτόν ἐστι αἰρετωτέρη, ὁκόσον ἐλευθερίῃ δουλείης (Stob. 4.1.42 = fr. 596 Luria).

generically regular, such that certain kinds of thing recur predictably,<sup>230</sup> and particularly irregular, such that we cannot ever perceive precisely (with absolute certainty) how any particular thing must exist in any given instance.<sup>231</sup> Democritean ethics offer us a strategy (μηχανή) for living with this necessity, a method that tames our lack of insight into particulars (*will this particular experience kill me?*) by cultivating a proper regard for the generic (*how can I make my inability to predict the outcome of this particular experience minimally harmful, knowing that I am mortal?*). Thus, contrary to the assertions of Epicureans and Dyroffians (see 4.1), Democritus consciously tells a cogent story of universal human experience in all the fragments that remain of his lost oeuvre. That story is founded on the common Critical insights (1) that existence is material, and (2) that the shapes we perceive in it are mortal. It construes human morals as historical developments in a material process (or processes) determined by an underlying physical cause (or causes) whose influence consistently appears regular in general without being so in particular. The sort of material determinism it presumes (referred to as *supple determinism* above in chapter 2) is not transparently self-refuting (whether by self-contradiction or failure to account for obvious empirical realities in historical human experience, including our inability to predict the outcome of particular circumstances with accuracy).

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230 Like things always sort themselves with like, but the manner of their association and dissociation in individual instances is as unpredictable as the spontaneous sorting of birds in a flock, grain in a sieve, or pebbles on the beach (fr. 316 Luria). Man always occurs as a living being subject to death, but the precise circumstances of his life and death vary unpredictably (fr. 103 Luria). See chapter 2.2.

231 Two clear expressions of this constant Democritean dogma: ἐτεῆι μὲν νυν ὅτι οἶον ἕκαστον ἔστιν <ἢ> οὐκ ἔστιν οὐ συνίμεν, πολλαχῇ δεδιλωται (fr. 55 Luria); τόλμα πρήξιος ἀρχή, τύχη δὲ τέλος κυρίη (fr. 33b Luria). Failure to appreciate this aspect of Democritean thought makes transparent nonsense of his physics (4.2.4) as of his ethics (4.1).

Like other δῖάκοσμοι in the Critical Tradition, the world-order of Democritus exists as a rhetorical paradigm for describing all the material phenomena that make up human experience, individual and collective. Democritus explicitly makes his paradigm one in which the association between particular words and their referents (the particular material phenomena he invokes them to describe) is arbitrary.<sup>232</sup> Thus, whether he speaks as a physicist or a moralist, he never talks definitively about the particular outcome of any particular material process. He cannot provide precise dimensions for any particular instance of the generic material phenomena he refers to with words like ἀνάγκη, κόσμος, ῥυσμός, ἄνθρωπος, πενίη, or εὐθυμία. In his mouth, words like these are generically recognizable signals pointing descriptively—not definitively—at material particulars that appear like one another in human experience. We notice that like things associate with like. Democritus calls this observation ἀνάγκη, without pretending to understand precisely how like goes with like in every instance. We notice that like things associate with like in more or less orderly fashion, such that our material environment always contains more or less regular objects that move more or less regularly with respect to each other. Democritus calls the order κόσμος and the objects ῥυσμοί. He never pretends

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232 τύχηι ἄρα καὶ οὐ φύσει τὰ ὀνόματα (fr. 563 Luria). This practical attitude toward language is reflected throughout the corpus of fragments, where words are consistently employed as subjective descriptions rather than objective definitions of empirical reality—e.g. πενίη πλούτος ὀνόματα ἐνδείης καὶ κόρου· οὔτε οὖν πλούσιος <ὁ> ἐνδέων οὔτε πέννης ὁ μὴ ἐνδέων (fr. 652 Luria). It also tracks the fundamental ignorance of objectivity built into Democritean atomism, wherein the only objective realities are matter and void; everything else is subjective, existing as nothing but more or less fleeting and contradictory material impressions on the impermanent shape of the entity that perceives them: ἀρχὰς εἶναι τῶν ὅλων ἀτόμους καὶ κενόν, τὰ δὲ ἄλλα πάντα νενομίσθαι (DK68A1).

to know precisely what *order* or *shape* look like in every instance (such that he or anyone else might predict precisely how any single order or shape must integrate or disintegrate). We notice that human beings represent particular instances of one sort of object existing in more or less regular form and moving more or less regularly. Democritus refers to the generic likeness observed in human particulars with the word ἄνθρωπος. He never suggests that he or anyone else might know precisely how any single human being must live or die: in fact, he explicitly denies knowledge of such particulars.<sup>233</sup> Finally, we observe that particular human beings experience vicissitudes with generic similarity that we can describe with words like πενίη or εὐθυμία. When Democritus uses such words, he is not offering an objective definition (such that *poverty* means something precise like *eating two measures of bread and one measure of water each day*). Instead, he merely points generically toward particulars that vary irregularly as different individuals experience them. My poverty is not yours any more than my nose is, and Democritus never expects it to be. From his position, the word is useful not as a precise, particular definition (for some particular thing he or anyone else has experienced) but as an imprecise, generic description (for multiple particular things that different people experience recurrently but not identically).

In Democritus' physics, lack of knowledge about particulars follows from the fact that the multiverse is infinite, with an infinite variety of atomic shapes experiencing an infinite variety of movements in infinite void. Regularity that we observe in this physical

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<sup>233</sup> Man is something we all know (DK68B165), but none of us knows how each individual man must look or live in particular circumstances (fr. 103 Luria). For more, see note 231 above.

infinity is conventional and subjective, not absolute or objective. All that we can say definitively is that all the substance we perceive inevitably disintegrates at some point: the persistence of substance in spite of this eternal disintegration leads us to infer some permanent matter, as the differentiation and displacement of substance on its path to dissolution leads us to infer some permanent lack of matter. In Democritus' ethics, lack of knowledge about particulars means that death is always imminent. Regularity that we observe in particular moral behaviors is conventional and subjective, not absolute or objective. All we can say definitively is (1) that all men die (exactly as all perceivable objects disintegrate: note that this empirical observation is the foundation of Democritean ethics and physics); (2) that the subjective psychic attitudes one cultivates toward death exert powerful influence on the quality of one's life; and (3) that the best method for enjoying life (or making a beautiful death, which amounts to the same thing) is always to limit one's emotional responses to unknowable particulars as much as possible (so that death is expected and welcome in every instance where the mortal human shape may find itself). The lack of particular boundaries in physics translates directly into a lack of particular boundaries in ethics. The same mysterious necessity that makes the worlds and their shapes generically regular and particularly irregular also makes human morality generically regular (*all human beings experience happiness and death*) and particularly irregular (*we do not all experience happiness and death precisely the same way: negotiating the historical coincidence between them in particular circumstances so that it occurs most pleasantly is an inherently subjective process, one that varies over time and*



*between individuals).*

In physics, the lack of insight into particulars means that perceptions of material reality vary over time and between observers.<sup>234</sup> In ethics, it means that moral responses to these perceptions vary the same way. Hence the need Democritus discovers for the individual to cultivate his own internal awareness (αἰδώς, φρόνησις, σοφίη, σωφροσύνη, ὀξύδερκεῖη)—a moral conscience that shows him his own health and disease as it exists uniquely in his particular material environment. Conscious of his material integrity as something unique to himself, he is able to recognize the boundary between pleasure and non-pleasure as it exists in his particular circumstances, cultivating personal habits that bring him just enough of each to be happy without risking unnecessary death (see 4.2.2-4). As he makes these habits, he will deliberately avoid antagonizing people around him needlessly: his personal νόμοι will not bring him into unnecessary moral conflict with the people around him, people with their own νόμοι individual and collective that he will endeavor to respect as much as possible (see 4.2.5). Particular outcomes of this process are unknowable, of course, but its generic outcome is a human being maximally happy and/or minimally miserable with whatever material vicissitudes he may experience. The particular happiness of individuals living by Democritus' method will vary considerably, as different material circumstances necessarily call for different definitions of *τερπὴ* and *ἀτερπὴ*, but the generic happiness that Democritus' method enables will always be one of cheerful poverty—the kind of cheerful poverty that occurs as the individual deliberately

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<sup>234</sup> τοῦτο μάλιστα ἐνισχύειν πρὸς τε τὴν αἴσθησιν καὶ τὴν δύναμιν, ἔτι δὲ εἰς ὅποιαν ἔξιν ἂν εἰσέλθῃ· διαφέρειν γὰρ οὐκ ὀλίγον καὶ διὰ τοῦτο τὸ αὐτὸ τάναντία, καὶ τάναντία τὸ αὐτὸ πάθος ποιεῖν ἐνίοτε (DK68A135). See 4.2.4 above.

avoids excessive emotional exposure to material wealth and dearth, the wealth and dearth that consistently make human life unnecessarily bitter and brief for all people in the long run even as for some folks they make it exceedingly sweet in the short. Taking happiness from his own subjective satiation rather than looking at others who appear to live better than he does, the wise man avoids threatening that happiness, which becomes maximally secure and stable, regardless of particular circumstances.

This is the whole point of Democritus' calculated moral platform—making human happiness minimally dependent on the caprice of unknowable particulars. It is a point entirely consistent with his physics. More than that, it is a point required by his physics, which make particulars uniquely real (individual atoms are the only things that exist with perfect consistency in the void) and then recognize that they are unknowable (beyond intuiting their existence in the most generic way, we cannot tell precisely what individual atoms look like or how they move relative to each other in every situation). The physics thus create a world in which the question arises: *how to live in a world of unknowable particulars?* The ethics answer this question.

The historical reception of Democritus' διάκοσμος obscures its original coherence, introducing a foreign opposition between determinism and moral freedom that makes no sense from a Democritean perspective. To our atomist, there is no such thing as moral volition (ἐπιθυμία, ὀρεξις, αἰδώς, φρόνησις, σοφία, σωφροσύνη, ὀξυδερκείη) that exists utterly unlimited (free, random, unconditioned). Volition is always determined (limited, shaped, conditioned) by material circumstances (*I cannot desire something or its lack if I*

*am utterly unaware of it, and my response does not arise as an utterly random event: my material constitution conditions it in ways that can be observed, e.g. when I eat honey while sick and notice that it tastes different than when I am well).* But that does not mean that choice is an illusion, that Democritus perceives humanity lacking any opportunity for altering its path to death. On the contrary, every single perception offers humanity the chance to change its death. Seeing that death approaches me in the form of an oncoming train, I can choose voluntarily to step out of the way (as I could not if I did not notice the train). Democritus sees a world full of oncoming trains, instances of death too many and varied to be noticed once for all time and all people.<sup>235</sup> The existence of this world means that the individual must be vigilant all the time, on the lookout for trains only he can see.

The train that kills you will not always be the one that kills me, even if both of us are run down. Lack of insight into particulars means that you cannot afford to make me sole custodian of your mortality, expecting me always to see trains for you. (How could I do this, when I cannot even see every instance of death threatening me?) This does not mean that we should not look out for each other. On the contrary, mutual surveillance is a moral imperative, part of the necessary interdependence that defines humanity. But we should confront death for ourselves. I should make my own peace with death rather than try to make yours, and vice versa. Confronting my own death, the trains that threaten my mortality constantly in every circumstance where I may find myself, I see clearly that your happiness is not and cannot be a prescription for mine. I naturally insulate myself

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<sup>235</sup> The generic reality that all men die says nothing about what particular reality will be the occasion of our own death, as the generic reality that trains run people down says nothing about which particular train might run me down.

from dangerous emotional responses to what I observe as your happiness (or misery).

Democritus wants me to perceive this reality constantly, making the voluntary choice to notice over and over again how human life is inherently limited, and how my expression of its limits differs from yours.

The more I go out of my way to notice this reality, a reality I might easily ignore (as I am constantly ignoring things in my vicinity), the more independent and secure my happiness will become. The more I choose to see how my happiness is not yours, the less dangerous to both of us my dependence on you becomes. Secure in the cheerful poverty I build for myself in the face of my unique limitations, I become minimally eager to take dangerous risks in order to secure some happiness I perceive you enjoying without me. When you are happy, I rejoice without envying your happiness too much. When you are sad, I mourn without gloating too much. My emotional response to you is tempered in every instance by the realization that your happiness is not mine, just as your health is not mine nor your death. My decision to notice this reality exerts a powerful determinative influence on the course of my life (my own unique progress toward death): it increases my enjoyment by insulating it in every instance from unnecessary interruption, the kind of interruption mindless people often experience as φθόνος καὶ ζήλος καὶ δυσμενίη when they envy the excessively and ostentatiously successful or themselves acquire obscene success and so inspire envy in other ἀνοήμονες.

As I repeatedly make the voluntary decision to perceive how cheerful poverty represents the best happiness available to me, I produce minimal envy in myself and

others—minimal dissatisfaction, minimal desire, minimal and minimally painful death. The same material circumstances that cause unnecessary illness and destruction for the ἀνοήμονες (when their happiness causes them to envy others or be envied by them) bring me health and prosperity (when my happiness is too small to cause envy in myself or others but still effective at satisfying essential human needs). Thus, for Democritus, awareness of human limitations produces not impossibly rigid determinism (inevitable outcomes that render all choice illusory) but meaningful moral freedom: according to the atomist, you are constantly free to notice how you express universal human limitations idiosyncratically and to build your own unique happiness accordingly. You are free to perceive that all people die. Perceiving that we all die, you can also see that not every death is inevitable: food in season can save the starving. Perceiving that we all require certain basic necessities in order to avoid premature death (necessities like food, shelter, and community), you can deliberately cultivate those things as your environment allows. Perceiving that our desires and fears consistently lead us to lose sight of these limited necessities and become dangerously obsessed with unlimited wealth and dearth, you can deliberately choose to limit your own fear and desire, cultivating a vision of happiness that consciously eschews excess and embraces limitation.<sup>236</sup>

Take away the limitations that define humanity, and you destroy all this freedom—just as surely as removing the tendons from my knee would destroy its ability to move. For Democritus, life is like my knee—inherently limited, conditioned, and determined.

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<sup>236</sup> μετριότης τέρψις καὶ βίου συμμετρία (fr. 657 Luria). οὕτως τῶν περιηκμακότων (fr. 734 Luria). εὐογκία (fr. 737 Luria). τὸ μέτριον (fr. 753 Luria).

This does not mean that the atomist denies phenomena that we indicate with words like *freedom*.<sup>237</sup> On the contrary, what freedom there is in the worlds built by necessity exists precisely because of limitation. The freedom of human beings to create many different styles of cooking exists as an expression of the limitation that we must all eat in order to survive. My freedom to learn things well by dint of voluntary πόνοι arises from the limitation that we must all learn (experiencing μάθησις that alters our material shape). My freedom to die beautifully exists as an expression of the limitation that we must all die. Thus, from Democritus' perspective, it is not really correct to speak of an opposition between νόμος and φύσις (or ἀνάγκη): that which humanity calls *nature* (or *necessity*) creates the limitations from which that which we call *custom* arises and differentiates.<sup>238</sup> Without limitations that exist generically, inherently, and inevitably such that I can refer to things with words like *nature* or *necessity* and make sense to you, the freedom evident in particular outcomes (including what we call *habits* or *culture*) could not exist.

Recognizing that universal limits exist does not commit Democritus to the position that these limits are always perfectly regular in particular instances, such that words like *nature* or *necessity* designate things that can be defined comprehensively—with the precision characteristic of an elegant algebraic equation that consistently predicts the same solution to the same problem. The Critical Tradition loves to recognize universal limitation in human experience without pretending to define it minutely or

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<sup>237</sup> See the Epicurean critique of Democritus discussed in 4.1 above.

<sup>238</sup> Here I agree entirely with the interpretation offered by Taylor (2007): “[T]here is no deep antithesis between our natural capacities and the practices and conventions which, in developing those capacities, shape us as moral and social beings” (9).

absolutely. When Heraclitus makes *war* father of all things, for example, he is not pretending to know precisely how the tide of cosmic battle turns in every instance (*strike your forehead on the lintel at noon to initiate the attack that will culminate in your achieving perfect insight into the λόγος*). When Empedocles speaks of *love* uniting the world that *strife* tears apart, he is describing reality generically as a poet (*elements exist and constitute our changing world-order by associating and dissociating constantly*) rather than defining it exactly as a chemist (*mix the four elements in these precise quantities in this precise manner to precipitate the objective physical reality known as στοργή*). In the same way, when Democritus says that all things are determined by material necessity and/or that atoms have natural motion as an inalienable characteristic, he is not pretending the world or anything in it is perfectly regular or predictable. Reading the atomist in isolation from his peers in the Critical Tradition makes this reality easy to overlook, especially when we read him through the eyes of witnesses like Theophrastus and Diogenes Oenoandensis, scholars whose impression of Democritus is both foreign (originating outside the Critical Tradition) and hostile (seeking to undercut the atomist's claim to offer useful information to conversations about the nature of human existence). This study exists as a deliberate counterweight to such positions—a challenge to readers ancient and modern who see the world-order of Democritus as a mess of careless contradictions<sup>239</sup> rather than a cogent attempt to understand and engage with

239 Thus Theophrastus: οὔτε γὰρ οἶόν <τε> τὸ σχῆμα πάθος εἶναι οὔτε ταῦτόν τοις μὲν σφαιροειδὲς τοῖς δ' ἄλλως (*De Sens.* 69); Diogenes Oenoandensis: κατὰ γὰρ τὸν σὸν λόγον, ὦ Δημόκριτε, οὐχ ὅπως τὸ ἀληθὲς εὐρεῖν, ἀλλ' οὐδὲ ζῆν δυνησόμεθα (fr. 7, coll. 2-3 Smith); Mesiano (1951): “La contraddizione tra la sua concezione filosofica generale e la sua etica rimane innegabile” (135); and Barnes (1982): “[P]hysics and ethics were so successfully compartmentalized in Democritus' capacious mind that he never attended to the larger issues which their cohabitation produces” (535).

material reality.

Against these readers—whether ancient Aristotelians and Epicureans or modern Dyroffians—this study maintains that the best interpretation of our available evidence is that Democritus followed established tradition in offering a materialist ethic deliberately and cogently consistent with his materialist physics.



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## BIOGRAPHY

Joseph Gresham Miller was born February 4th, 1982, in Johnson City, Tennessee, in the United States of America. In the year 2000, he matriculated at the University of Georgia in Athens, where he was introduced to Classical Studies. After interrupting his studies to live and work in northern Spain for two years, he transferred to Brigham Young University in Provo, Utah, where in 2006 he completed a bachelor's degree of arts in Classical Studies *summa cum laude*. That same year he began doctoral work in Classics at Duke University in Durham, North Carolina, where the germ of this dissertation was conceived. As part of his doctoral studies, he collaborated with fellow student Jason Combs to edit and publish one of the documentary papyri stored in Duke's archives: "A Marriage-Gift of Part of a Monastery," *Bulletin of the American Society of Papyrologists* 48 (2011): 79-88. At Duke he held the James B. Duke Fellowship from 2006 to 2012 and the Jenkins Family Graduate Research Fellowship in 2011. Most recently (from 2012 to 2014) he held the Faye Horton Sawyer Teaching Fellowship at the Illinois Institute of Technology in Chicago, where he completed this dissertation. He has been a member of the honors society Phi Kappa Phi and the Classics honors society Eta Sigma Phi, and he is currently a member of the American Philological Association.